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MEMBER OF THE AUDITING COMMITTEE SINCE JANUARY 1894.  
MEMBER OF THE FINANCE COMMITTEE SINCE JANUARY 1907.

FIELD MUSEUM OF NATURAL HISTORY.

PUBLICATION 213.

REPORT SERIES.

VOL. VI, No. 2.

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ANNUAL REPORT OF THE  
DIRECTOR

TO THE

BOARD OF TRUSTEES

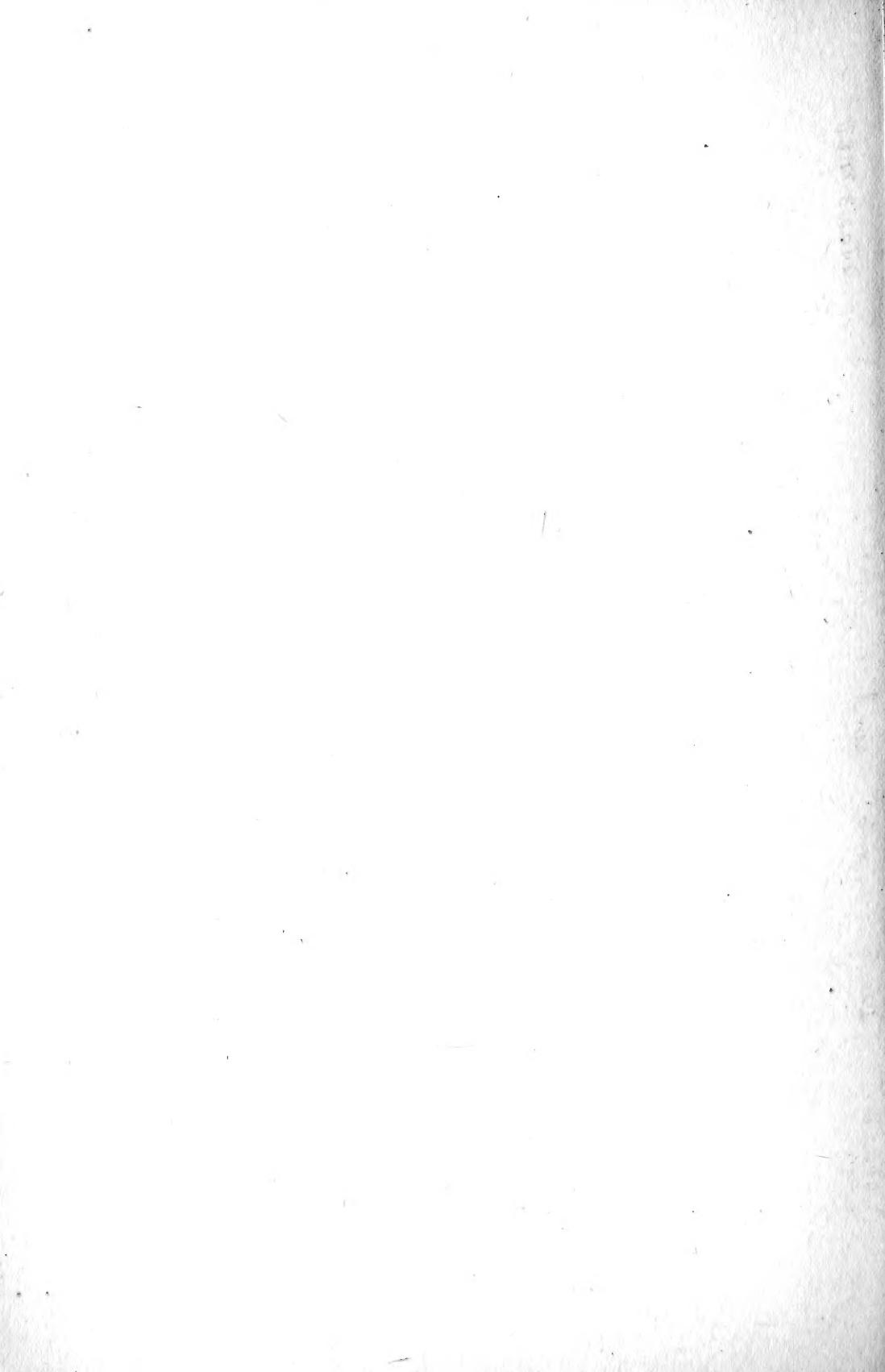
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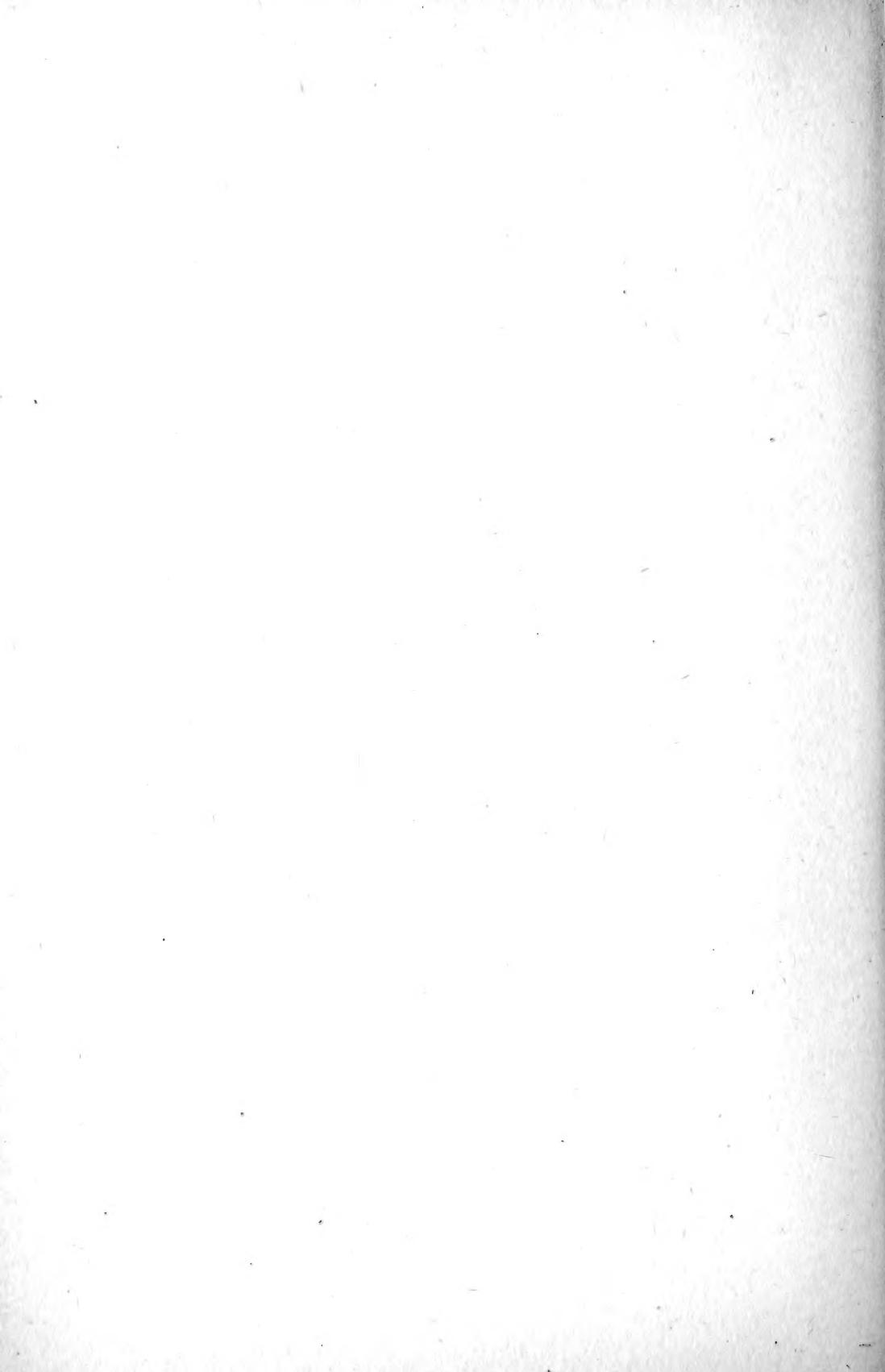
### FORM OF BEQUEST

I do hereby give and bequeath to "FIELD MUSEUM OF NATURAL HISTORY" of the City of Chicago, State of Illinois,

Cash Contributions made within the taxable year to Field Museum of Natural History to an amount not in excess of 15% of the tax payer's net income are allowable as deductions in computing net income under the Revenue Law.

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*Assistant Curators*

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FAY-COOPER COLE—*Malayan Ethnology*  
ALBERT B. LEWIS—*African and Melanesian Ethnology*  
J. ALDEN MASON—*Mexican and South American Archaeology*  
HELEN C. GUNSAULUS—*Japanese Ethnology*  
RALPH LINTON—*North American Ethnology*

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B. E. DAHLGREN, *Associate Curator—Economic Botany*

*Assistant Curator*

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DEPARTMENT OF ZOOLOGY

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*Assistant Curators*

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EDMUND HELLER—*Mammals*  
JOHN T. ZIMMER—*Birds*  
KARL P. SCHMIDT—*Reptiles and Amphibians*

*Division of Taxidermy*

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DEPARTMENT OF THE N. W. HARRIS PUBLIC SCHOOL EXTENSION

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SUPERINTENDENT OF MAINTENANCE  
JOHN E. GLYNN

CHIEF ENGINEER  
W. H. CORNING

## ANNUAL REPORT OF THE DIRECTOR 1922

To the Trustees of the Field Museum of Natural History:

I have the honor to present a report of the operations of the Museum for the year ending December 31, 1922.

During the year the construction of the terrace, sixty feet wide, extending around the entire structure, and rising to a height of six feet above the ground, was completed. It is constructed of the same marble as the building proper and is provided with wide and imposing stairways leading to the central doors. This marks the completion of the Museum building.

The year was characterized not only by normal development but by an unprecedented activity and expansion which extended to practically all departments and sections of the Institution. After the arduous and anxious work of reinstallation and reorganization had been completed in 1921 the staff, with largely increased scope for action and progress, and greatly improved facilities for performing its duties, resumed its normal scientific and departmental activities with renewed zest and vigor.

This was particularly evidenced by the activity with which the previously formed plans for scientific exploration and survey of South America were entered into. No fewer than eight expeditions, representing each of the four Departments of the Museum, operated in that continent during the year, detailed accounts of which are given elsewhere. This activity in the field, so vital to the proper growth of an institution of this type, was made possible mainly by the generosity of Captain Marshall Field who, as was announced in last year's report, provided a contribution of \$50,000.00 a year for a period of five years for this purpose. In addition to this President Field contributed \$3,000.00 towards the expenses of a botanical expedition to British Guiana, and Mr. Arthur B. Jones provided the sum of \$25,000.00 to meet the cost of an important expedition for an ethnological investigation of Malaysia. Much of the stimulus given to the staff of the Museum may be attributed to encouragement imparted by these gen-

erous gifts which permit the accumulation of material of great value from new fields, often situated in remote and little known parts of the world. While the Museum has made phenomenal progress during the few years it has been in existence, the present increase of its scope and opportunities involves new needs and responsibilities. No greater service could be rendered to the Museum at this important period in its history than to make possible the extension of its expeditionary programme to insure that comprehensiveness and completeness of collections which is expected of an institution of importance and standing. Indeed, in this age of intensive investigation and research in all the sciences, the expansion of activities in this direction becomes almost imperative.

A further gift of \$50,000.00 towards the deficit in the Building Fund was received from President Field. Furthermore, he continued his annual contribution of approximately \$12,000.00 towards the work of plant reproduction in the Department of Botany, and added \$2,000.00 to the Harris Public School Extension Fund. Mr. James Simpson paid in to the Treasury of the Museum, during the year, a further sum of \$25,000.00 towards the construction of the theatre which bears his name. Mrs. Robert F. Cummings has been good enough to indicate her intention to provide \$2,000.00 towards the cost of publishing the manuscript prepared by Assistant Curator Cole on "The Tinguian. Social, Religious and Economic Life of a Philippine Tribe."

It is desired to make special mention of the interest which Mr. Edward E. Ayer has continuously evinced in the welfare of the Institution. It was again demonstrated by his decision to transfer \$100,000.00 United States of America 4 $\frac{1}{4}$ % Gold Bonds to the Museum, which will eventually be used to establish a permanent lecture foundation. The Board of Trustees has decided that the benefaction is to be forever known as "The Edward E. Ayer Lecture Foundation." Mr. Ayer has also provided a fund for the payment of a preparator in the Science and Art Museum of California, who will provide this Institution with some duplicates of its extensive paleontological collection.

Among the noteworthy gifts received by the Museum, during the period under review, were collections and specimens from Mr. Martin A. Ryerson, Mr. Keith Spalding, and Mr. William J. Chalmers. General Charles G. Dawes has signified his intention of presenting to the Museum Library Dr. Manasseh Cutler's botanical manuscripts, notes and correspondence, together with notebooks and field observations.



THE JAMES SIMPSON THEATRE.



These deal principally with economic plants observed by Dr. Cutler and form an interesting series of documents.

The Museum is fortunate in the possession of many friends and benefactors, and it is fitting here to renew the expression of thanks to all who have contributed towards it in money and gifts during the year.

An excellent bronze bust of the late Dr. Frank W. Gunsaulus, executed by John G. Prasuhn of the Department of Anthropology, was completed during the year and installed in Frank W. Gunsaulus Hall.

The continued efforts of President Field to increase the Life Memberships of the Institution, resulted in the election of the following during the year: Mr. William A. Alexander, Mr. Charles Garfield King, Mr. Louis B. Kuppenheimer, Mr. Philip S. Edmunds, Mr. Thomas H. McInnerney, Mr. Arthur L. Farwell, Mr. James C. Ames, Mr. James P. Soper, Mr. Lester Armour, Mr. T. J. McNulty, Mr. Milward Adams, Mr. J. Ogden Armour, Mr. Knowlton L. Ames, Mr. Benjamin H. Marshall, Mr. J. M. Hopkins, Mr. Charles B. Pike, Mr. Edgar A. Bancroft, Mr. Harold N. Scott, Mr. Robert F. Carr, Mr. Ralph Van Vechten, Mr. E. W. Cramer, Mr. Joseph R. Noel, Mr. Howard W. Fenton, Mr. W. B. Storey, Mr. Frederick R. Babcock, Mr. Chauncey B. Borland, Mr. Charles I. Pierce, Mr. Louis A. Ferguson, Mr. John J. Glessner, Mr. John P. Wilson, Jr., and Mr. Frank A. Marsh.

During the year Mr. D. C. Davies became a Corporate Member of the Museum and was also elected a member of the Board of Trustees to fill a vacancy in the Board.

The following gentlemen were elected Honorary Members of the Museum in recognition of the eminent service they have rendered to science: Mr. Martin A. Ryerson, Captain Marshall Field, Mr. Arthur B. Jones, Mr. James Simpson, Mr. Charles R. Crane, Colonel Albert A. Sprague, Mr. Albert W. Harris, and Mr. William J. Chalmers.

Mrs. Robert F. Cummings was elected a Patron of the Museum, in recognition of the eminent service she has rendered to the Institution.

One of the most important and significant steps taken during the year was the considerable addition made to the scientific staff; Dr. Charles E. Hellmayr was appointed Associate Curator of Birds; Edmund Heller, Assistant Curator of Mammals; Karl P. Schmidt, Assistant Curator of Reptiles and Batrachians; John T. Zimmer, Assistant Curator of Birds; J. Francis MacBride, Assistant Curator of Taxonomy. Assistant Curator Dahlgren was promoted to the post of Asso-

ciate Curator of Economic Botany. The employment of Ashley Hine as Chief Bird Taxidermist; Colin C. Sanborn as Preparator in Birds; George M. Sternberg as Chief Preparator and Collector in Vertebrate Paleontology; John B. Abbott as Preparator in Vertebrate Paleontology; Carl E. Gronemann as Artist, and A. W. Miller as Photogravurist, is reported. Miss Dorothy Roberts was appointed Guide-Lecturer early in the year.

Several additions have also been made to the force in the Section of Printing, these additions being necessitated by the increased demands made by the production of the Museum publications.

A series of leaflets, describing objects and collections in the Museum, was inaugurated during the year. Fourteen of these were published and distributed. A manual of the Museum, containing information concerning the foundation, the endowments, and the activities of the Institution was published in November. A third edition of the Guide to the collections was brought up to date and issued late in the year. A Synopsis of the collections was also prepared and published, more especially for the use of the public schools. Reference is made elsewhere to the issuance of numbers in the regular publication series.

It is interesting to note in view of the facilities provided by the Institution that the Board of Trustees has granted permission to the Central Section of the Anthropological Association to designate Field Museum as the headquarters of the organization. The visit of the American Ornithologists' Union to Chicago, during the month of October, was a notable and interesting event, at which a large number of prominent ornithologists of the United States and Canada were present. An instructive popular session, illustrated by motion pictures, was given in James Simpson Theatre by the Union. An interesting exhibit of selected paintings, drawings and photographs of birds, by several artists, was displayed during the week in Room 12, on the main floor, and was kept open to the public until the third of December, attracting an unusual number of visitors. The American Society of Ichthyologists and Herpetologists also convened at the Museum during the same week. The regular monthly meeting of the Superintendents and Principals of the Chicago Public Schools was held in the James Simpson Theatre on November 4th, when ideas and suggestions were exchanged as to a closer cooperation between the Museum and the schools. The results were most satisfactory.

The Museum was honored during the year by the visits of a considerable number of officers and students of American and foreign

museums, and it was gratifying to note their unanimous expression of admiration of the fitness and extent of the building for museum purposes, the adequate equipment for the scientific and working staffs, and the arrangement and interest of the exhibits.

An important change in the method of recording the Museum departmental accessions was instituted by the Recorder in the month of June. The hand-written records in the accession books were replaced by typewritten cards kept in Rand Visible Files. Each drawer of these files contains 310 cards, showing at a glance the source of the material accessioned, its character, and the accession numbers. The hand-written indexes were substituted by a typewritten loose leaf system. The old manila jackets containing the accession records were also discarded, owing to their decay through chemical reaction, and approximately ten thousand new jackets of a more durable quality were typewritten, providing suitable protection for all records of the accessions.

It is with pleasure and satisfaction that record is made of the loyal cooperation and the willing service that all members of the staff have rendered during the past year, which has been especially encouraging in an individual sense, and proved, collectively, of much benefit to the Institution.

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The alterations and rearrangements of the ground floor were practically completed during the year and the results have fully justified all anticipations. New exhibition area on this floor has been created to the extent of 125,000 square feet. An addition of importance was the construction of a small lecture hall intended to seat approximately two hundred and fifty persons. The hall has been equipped with stereopticon, screen and arrangements for controlled light. The James Simpson Theatre was completed during the year, and was also equipped with a stereopticon and motion picture apparatus.

The Library, Reading Room and Stack Room are now permanently established on the third floor, where they are conveniently placed in close proximity to the quarters of the scientific staff, which not only tends to increased efficiency, but has resulted in economy both of time and expense. In making these arrangements the fullest consideration was given to the comfort and convenience of those using the Library and the Reading Room, the accommodation at their disposal having been largely increased. The library is now adequately equipped and furnished for the continuance of its widespread usefulness.

The installation of a system for supplying the laboratories and lavatories with hot water was completed during the year. Illuminated signs,

indicating stairways, lavatories, restaurant, etc. were also provided. An elaborate system of ventilation for the ground floor was completed before the end of the year. The large room, situated at the southeast corner of the main pavilion, assigned for the use of the President and the Board of Trustees, has been decorated and furnished, President Field assuming the entire expense thereof.

Early in the year it was decided to establish a Photogravure Section for the production of illustrations for publications, leaflets, and postal cards. Space on the third floor was assigned for this work, in which were placed a large gas-heated oven for drying plates, a gas plate with boiler, work bench, trays and other appurtenances for preparing the coating. A 25" x 38" printing frame and stand, and a solar arc lamp of 3500 candle-power for copying the sensitized photogravure plates were also installed. A large galvanized iron sink, washing and lye tanks, drying racks, two stock tables and a hot water boiler to furnish vapor for the press room were placed in a room between the plate room and the press room. The first illustrations produced were for the Annual Report of the Director for the year 1921. Since then illustrations have been completed for eleven leaflets and for the publication "The Flora of the Santa Catalina Island." Approximately 20,000 postal cards were produced.

To facilitate the manufacture of installation furniture and fixtures in the Department of Anthropology, there were installed in Room 38 on the third floor a Crescent 24" variable speed planer, a Wallace 6" bench jointer, a Wallace 7" universal saw and a Moak single spindle horizontal boring machine; all of this machinery is driven by individual motors.

Four handsome bronze sign posts have been placed on Michigan Avenue at the entrances to Grant Park. These signs indicate the opening and closing hours of the Museum and have undoubtedly attracted the attention of strangers to the Museum.

A change in the hours of closing the Museum was authorized by the Board at a meeting held February 20, 1922. The Museum is now open to the public during the following hours: January, November and December 10:00 A.M. to 4:00 P.M.; February, March, April and October 10:00 A.M. to 5:00 P.M.; May, June, July, August and September 10:00 A.M. to 6:00 P.M. Heretofore the Museum has been closed to the public on Thanksgiving Day and Christmas. The Board, at a meeting held November 6, 1922, determined that the Institution should now be open to the public every day in the year.

MAINTENANCE: The Budget approved by the Board of Trustees authorized the expenditure of the sum of \$306,973 for the maintenance of the Museum during the year 1922. Budget expenditures amounted to \$302,507, leaving a surplus of \$4,466. Other appropriations amounted to \$90,924, which were mostly met by special contributions.

### PUBLICATIONS

The following books have been published during the year:—

- Pub. 208—Report Series, Vol. VI, No. 1. Annual Report of the Director for the Year 1921. 76 pages, 16 photogravures, edition 2,000.
- Pub. 209—Anthropological Series, Vol. XIV, No. 2. The Tinguian. Social, Religious and Economic Life of a Philippine Tribe. By Fay-Cooper Cole. With a chapter on Music by Albert Gale. November, 1922. 267 pages. 83 halftones, 26 zinc etchings, edition 1,250.
- Pub. 210—Zoological Series, Vol. XII, No. 3. Game Birds from Northwestern Venezuela. By W. H. Osgood and B. Conover. August, 1922. 32 pages, 1 colored plate, edition 1,020.
- Pub. 211—Anthropological Series, Vol. VI, No. 5. The Hopewell Mound Group of Ohio. By Warren K. Moorehead. 126 pages, 48 halftones, 68 zinc etchings, edition 1,268.

A list of handbooks and leaflets published is given below:—

- Manual—52 pages, edition 5,000.
- General Guide—24 pages, edition 15,000.
- Synopsis of the Collections—44 pages, edition 11,160.
- List and Prices of Publications—16 pages, edition 750.
- Leaflets—Anthropology No. 1. Chinese Gateway. By B. Laufer. One photogravure, 3,044 copies.
- Anthropology No. 2. Philippine Forge Group. By F. C. Cole. One photogravure, 2,980 copies.
- Anthropology No. 3. Japanese Collections. By Helen C. Gunsaulus. 20 pages, 6 photogravures, 2,916 copies.
- Anthropology No. 4. New Guinea Masks. By A. B. Lewis. 12 pages, 6 photogravures, 3,000 copies.
- Anthropology No. 5. The Thunder Ceremony of the Pawnee. By Ralph Linton. 20 pages, 4 photogravures, 3,103 copies.

- Anthropology No. 6. The Sacrifice to the Morning Star. By Ralph Linton. 20 pages, 1 photogravure, 3,073 copies.
- Botany No. 1. Figs. By B. E. Dahlgren. 8 pages, 1 photogravure, 3,088 copies.
- Botany No. 2. Coco Palm. By B. E. Dahlgren. 8 pages, 1 photogravure, 3,088 copies.
- Botany No. 3. Wheat. By B. E. Dahlgren. 8 pages, 1 photogravure, 3,052 copies.
- Geology No. 1. Arizona Gold Mine. By H. W. Nichols. 12 pages, 1 photogravure, 2,952 copies.
- Geology No. 2. Models of Blast Furnaces for Smelting Iron. By H. W. Nichols. 12 pages, 3 photogravures, 3,061 copies.
- Zoology No. 1. White-tailed Deer. By Wilfred H. Osgood. 12 pages, 1 photogravure, 2,940 copies.
- Zoology No. 2. Chicago Winter Birds. By Colin C. Sanborn. 12 pages, 1 photogravure, 3,099 copies.
- Zoology No. 3. The American Alligator. By Karl P. Schmidt. 16 pages, 2 photogravures, 3,122 copies.

#### LIBRARY

The Library was transferred early in the year to the third floor, thus bringing it into close proximity to the staff, which fully appreciates the greater convenience and accessibility. Two thousand one hundred and eighty seven books and pamphlets, together with sixty maps have been received during the year, bringing the total number of books etc. in the library to 79,658. A number of valuable volumes, and some of historic importance, were given to the library by friends interested in the work of the Museum. Mr. Edward E. Ayer has, with his customary munificence, added two hundred and twelve books to the Ornithological Library which bears his name. Among them are several beautifully bound copies of early editions, including one of Horrebow's Natural History of Iceland, translated from the Danish original and published in London in 1758. The gift includes the following works:

Blaauw	Monograph of the cranes
Buller	Birds of New Zealand
Butler	Birds of Great Britain 6v.
Dresser	Monograph of the coraciidae
Fritsch	Birds of Europe 1877



SKELETON OF THE EXTINCT COLUMBIAN MAMMOTH (*Mammuthus Columbi*) FROM SPOKANE COUNTY, WASHINGTON.  
GIFT OF GEORGE MANIERE.

$\frac{d^2}{dt^2} \left( \frac{\partial f}{\partial t} \right) = \frac{\partial^2 f}{\partial t^2}$

Jacquin	Beiträge zur geschichte der Vögel 1784
Meyer	Unser Auer,-Rackel-und Birkwold und seine abarten
Salvin & Broderick	Falconry in the British Isles 1855
Schlegel & Verster	Traité de fauconnerie 1844-1853
Swainson & Richardson	Fauna boreali-americana 1831
Swaysland	Familiar wild birds
Tschudi	Untersuchungen über die Fauna Peruana 1844-1846

Mrs. Elmer S. Riggs presented seventeen volumes of magazines of unusual interest and of early date from the library of her late father, Mr. Frank Smith. Thirty five volumes on miscellaneous subjects in Natural History were received from Mrs. William M. Derby, Jr. The Governor General of Chosen forwarded seven illustrated volumes on the antiquities of Korea. From the Institucio Catalana d'Historia Natural, Barcelona, the Koloniaal Museum of Haarlem, the Cultura Venezolana, Caracas, the Colegio de Senoritas, San Jose, Costa Rica, and the Canterbury Museum of New Zealand, were received complete sets of their publications. Other gifts of interest are indicated in the list of accessions.

Among a number of much-needed older works purchased during the year are the following:

Ammann	Hortus Bosianus
	Supellex botanica 1675
Colmeiro	La botánica y los botánicos de la peninsula hispano-lusitana 1858
Duparc & Tikonowitch	La platine et les gîtes platinifères de l'Oural et du monde
Forster	History of voyages 1786
Molina	Saggio sulla storia naturale del Chili 1810
Neve and Molina	Reglas de orthographia, diccionario del idioma Othomi 1767
Petherick	Travels in central Africa 1869
Raffenau-Delile	Mémoire sur les plantes qui croissent spontanément en Égypte 1824
Ramusio	Delle navigationi et viaggi raccolto & con molti vaghi discorsi 1553-1558

Rochefort	Histoire naturelle et morale des îles Antilles de l'Amérique 1665.
Ruiz and Pavon	Flora Peruviana et Chilensis 1798
Valentyn	Oud en Nieuw Oost Indien 1724-1726
Vesling	De plantis Aegyptiis observationes et notae ad prosperum Alpinum 1638

Among books of a later date are:

Baker	Calico painting and printing in the East Indies in the XVII and XVIII centuries
Phisalix	Les animaux venimeux et venins
Riviére	Le céramique dans l'art d'Extreme Orient

The system of exchange has, as usual, caused considerable additions to be made to the library. The publications of the Museum are sent to all kindred institutions and societies at home and abroad, and publications were received from six hundred and eighty-three institutions and individuals during the year. Eight new exchanges were effected with institutions having literature of value to the library. Five hundred and thirty-one volumes were bound. Increased accommodation for the various catalogues was provided by the addition of four sections to the card cabinets. Eleven thousand one hundred and twenty-two cards were written and filed during the year, together with the monthly installment of author cards from the John Crerar Library. The Museum is indebted each year to libraries in and out of the city for the loan of necessary reference books. This year it is especially indebted to the Library of Congress and the Lloyd Library of Cincinnati for the loan of very rare books not obtainable elsewhere in this country.

#### DEPARTMENTAL CATALOGUING, INVENTORYING AND LABELING

ANTHROPOLOGY.—During the year the work of cataloguing in the Department of Anthropology was completed as soon as possible after the new accessions were received. Some older collections were also catalogued. The total number of catalogue cards prepared amounts to 1,385, and are distributed geographically as follows: North America 688; Mexico and South America 39; India, Tibet, Burma, Siam and Annam 491; China and Japan 142; Malaysia 11; Polynesia 3; Australia 2; Miscellaneous 9. All these cards have been entered in the Inventory Books of the Department, which number 38. The number of accessions

received during the year was 43, of which 37 have been catalogued. Nine accessions of the previous year were also dealt with. The total number of catalogue cards entered from the opening of the first volume amounts to 157,562. Several thousand labels were prepared and installed during the year, the number of labels supplied by the printer to the Department totaling 6,047. These labels are distributed as follows: Plains Indians 1,917; Nootka, Bella Coola, Coast Salish, Kwakiutl, Iroquois, Sauk and Fox 655; Egypt 84; Roman Frescoes 72; Irish Antiquities 47; Busts of prehistoric man 30; India 326; Tibet 27; Java 277; China 764; Japan 1,574; Maps 16 and Miscellaneous 258. The printer, further, supplied the Department with 1,000 printed forms for measurements in physical anthropology, 1,000 catalogue cards and 600 cards for the label file. 418 label cards were added to the label file, which was arranged in conformity with the installation or changes in the halls. The labels for each exhibition case are kept together, bearing the same number as the exhibition case, so that any label desired may now be traced at a moment's notice. 588 prints were placed in the photographic albums, and five new albums were opened. Prints in several albums were provided with typewritten explanations.

**BOTANY.**—All newly accessioned specimens in the Department of Botany have been catalogued as fast as they could be organized. 16,059 entries were made in the sixty-two catalogue volumes, bringing the total number of catalogued specimens in the Department up to 512,426. Augmentation of the various card indexes during the past year is as follows:—

	No. of Cards Augmented 1922	Total
Index to Botanical Species .....	4,640	166,088
Index to Common Names .....	2,210	23,499
Index to Collectors .....	246	10,420
Index to Geographic Localities .....	51	2,860

**GEOLOGY.**—All accessions were catalogued as received, with the exception of the collections obtained by the Alberta expedition and part of those acquired by the Curator in Brazil, the cataloguing of which is not as yet complete. A total of 2,153 new entries have been made during the year. Of these, 1,045 represent additions to the mineral collection; 550 to paleontology; and 412 to the economic series. Of the specimens collected by the Curator in Brazil 808 have thus far been catalogued. A total of 310 new labels were written during the year, five being large descriptive labels. Of the smaller labels, a series of 106 were prepared for the exhibit of petroleum products presented by the Standard Oil

Company (Indiana), and 90 for miscellaneous specimens of minerals and meteorites. Most of these labels have been printed and installed, and the labeling of the Department may be considered as nearly complete as that of any actively expanding collection can be expected to be. To the Department photograph albums 167 prints have been added during the year, making a total of 3,821 prints now in these albums.

ZOOLOGY.—The accessions of the Department of Zoology, with the exception of the insects, were catalogued shortly after they were received. Some accessions that were received during the past few years and to which, at that time, the needed attention could not be given, were also properly catalogued. The total number of entries made was 3,589. They were distributed as follows: Birds, 2,704; Mammals, 365; Reptiles and Amphibians, 276; Fishes, 153; Insects, 75; Shells, 1; and Skeletons, 15. The making of the above entries, in most cases, also necessitated writing a label or tag with full data for each entry. The number of catalogue cards written was small. This was due to the fact that ten or more entries were recorded on each card, a new one being written for a species new to the various collections. For some groups, also, instead of cards, a loose-leaf ledger index has been adopted, a change that appears to be an improvement on the card system. For the collection of fishes 592 of these sheets, containing 1,886 entries, were written. A similar index, comprising 151 entries, was also prepared for the entire collection of salamanders. As a shelf guide to the reference collection of fishes, 358 labels, each one with a different number and family name in large type, were printed and duly installed. Although a number of exhibition labels were prepared, particularly in the case of shells, a limited number only were printed and installed, namely, 17 for a cicada group and 116 for a screen exhibiting fishes. The actual number of fish labels, however, is somewhat misleading, as they were first printed on black stock and later replaced by others that were printed on paper that is more in harmony with the new color adopted for fish screens.

The following table shows the work performed on catalogues and inventories in the various Departments:

	Number of Record Books	Total No. of entries to Dec. 31, 1922	Entries during 1922	Total No. of cards written
Department of Anthropology ...	38	157,562	1,385	157,562
Department of Botany .....	62	512,426	16,059	7,147
Department of Geology .....	22	147,671	2,153	8,456
Department of Zoology .....	40	105,220	3,589	34,909
The Library .....	14	130,894	11,120	306,438
Section of Photography .....	20	135,998	12,278	.....

## ACCESSIONS

The Museum, during the year, has been the recipient of a large number of important and valuable gifts. These, together with the extensive collections made by expeditions, have added very appreciably to the material and educational value of the exhibits of the institution.

**ANTHROPOLOGY.**—In the Department of Anthropology the unusually large number of 43 accessions is registered, 33 of which are by gift, 3 by exchange, 6 by purchase and 1 as the result of the Captain Marshall Field Colombian Expedition. Mr. Martin Ryerson presented a very remarkable burial figure of green-glazed Han pottery, representing a powerful mastiff in the attitude of guarding his master's grave. Such figures were interred with sport-loving noblemen in ancient China about the time of the beginning of our era, and are rare types. The figure in question is of so high a quality in modeling and glazing that it was deemed worthy of being placed on exhibition in the case showing selected examples of Chinese Art in Stanley Field Hall. To Mrs. Marshall Field, Sr., are due two lacquered and painted Chinese screens (so-called coromandel screens), each consisting of twelve panels and carved on each side with an elaborate design. One of these screens is shown in Room 23 in the northeast corner of the second floor. Another Chinese screen, composed of sixteen square detachable panels and adorned with well-carved figures of the Eight Immortals, was presented by Mr. Oskar J. Friedman of Chicago. A very fine and interesting old suit of painted hide armor with helmet and sword, from the Lolo of western China, was presented by Mr. William Ayer McKinney, Chicago. This welcome gift was very timely, as it fits in with a collection of 58 Lolo specimens purchased by the Museum from Dr. C. Schneider a botanist who travelled and collected in southwestern China. The Lolo form one of the groups of aboriginal tribes which settled in southern and western China prior to the arrival of the Chinese who conquered and colonized their country. While they gradually succumbed to Chinese influence, they still preserve many characteristics of their ancient culture, particularly in weapons and armor. They also retain their peculiar language and script. As they are difficult of access, Lolo specimens are rarely found in museums. The entire collection is now exhibited in Case 37 of Hall 24, and is particularly remarkable for its instructive series of hide armor.

Mr. William Wrigley, Jr., and Mr. Arthur B. Jones contributed jointly to acquire a unique collection of stone sculptures from ancient

India, the importance of which can hardly be exaggerated. Not only are most of these pieces exceedingly rare, but also most difficult to secure, as the exportation of antiquities from India is prohibited. It was solely due to a felicitous combination of circumstances that Mr. Alexander Scott, a well-known artist and traveller, who made the collection in the course of a many years' sojourn in India, was granted the privilege of taking it out of the country. The majority of the sculptures (27) belong to the so-called Gandhara period of the first two or three centuries of our era, being essentially Buddhistic in their religious character and under Hellenistic influence in their artistic types and style. There are eight excellent full figures and heads of Buddhas and Bodhisatvas, and twelve panels of friezes on which elaborate scenes are carved in high relief. Prominent among the latter are representations of Buddha's temptation by Mara, the spirit of evil, the first sermon preached by Buddha at Benares, and six figures of Greek composition presenting offerings to the Buddha. Seven other sculptures illustrate subjects of the purely Brahmanic religion or Hinduism, including a beautiful lava carving of the god Vishnu with his consort Lakshmi, and a frieze with four nautch-girls or bayaderes performing a sacred dance around a censer. The old religion of the Jaina, still flourishing among the merchants of India, is represented by a large marble statue of Parçvanatha, one of the prophets or teachers of the Jains, who preceded Mahavira, the actual founder of the religion, and by a fine cast image of solid brass, portraying another of their prophets.

In addition to this Indian collection, a valuable specimen from Tibet was purchased of Mr. Scott and is likewise due to the generosity of Mr. Arthur B. Jones. This is a ceremonial bone apron, consisting of forty-one plaques exquisitely carved, which was used in the sacred mystic ceremonies of the Tibetan Lamas. Such aprons are carefully guarded as temple treasures, and very few have crossed the borders of Tibet. Mr. Scott himself presented the Museum with a marble pedestal sculptured with a triad in high relief, representing Buddha seated in the center, supported by two Bodhisatvas with lotuses in their hands. This is a product of the third or fourth century A.D. A very interesting old Tibetan painting, depicting scenes from the life of the Buddha, is the gift of Miss Caroline Wicker, who added to it a number of other curious objects acquired during her travels in the Orient. An interesting cast image of solid gold, discovered in the jungle on the island of Mindanao, Philippines, was secured by purchase. It is presumably of Javanese workmanship, and was brought over to the Islands by traders. The type and style of the figure point to India. Mr. Edward

FIELD MUSEUM OF NATURAL HISTORY.

REPORTS. PLATE XX.



BURIAL FIGURE OF MASTIFF. HAN POTTERY, CHINA.  
GIFT OF MARTIN A. RYERSON.

UNIVERSITY OF ILLINOIS LIBRARY



E. Ayer presented breast ornaments, made of silver inlaid with plain and engraved stones, worn by a Dalmatian woman.

A pair of Japanese bows was presented by Mr. H. J. Patten of Chicago. They are over seven feet in length, are lacquered black and trimmed with red rattan bands. They are accompanied by a fur-covered quiver containing ten arrows, the quiver and bows fitting into a large black-lacquer brace with handles. Such sets were carried in processions of the former feudal lords or daimyo. The crest of Nabeshima, the powerful daimyo of the Province of Hizen, is impressed in black on the gilded leather bow-tips and quiver decorations. Mr. Junius Wood, the well-known correspondent of the Chicago Daily News, has donated a beautiful fighting sword or katana, with which is a scabbard of black lacquer decorated with designs of golden pine needles. The fittings are of gold, silver, and shakudo etched with a tendril design. Particular interest is attached to the blade which bears upon its tang the signature of Asafune Suyemoto and the date 1392. There were obtained in exchange with the Logan Museum at Beloit College, Wisconsin, fifty-three potsherds, fragments of prehistoric pottery found in shell-heaps along the bay of Tokyo, Japan. They were originally exhibited at the World's Columbian Exposition by the Department of Anthropology of the Imperial University of Japan.

A man's coat and a complete woman's costume, made by the Quiche Indians of Guatemala, have been acquired by purchase from Mr. E. W. Allstrom, who has promised to supplement this collection on his return to Guatemala. The woman's costume is of a type which has survived almost unchanged from prehistoric times, and is notable for its brilliant colors, its beautiful weaving, and its ornate embroidery. The Quiche are of the same stock as the prehistoric Maya, the most civilized nation of ancient America. In spite of their political conquest and their long contact with Europeans, they are still numerous and retain much of their ancient culture. An excellent collection of Chippewa material was acquired from the Public Museum of Milwaukee by means of exchange. The Chippewa are one of the largest tribes north of Mexico, and formerly ranged along both shores of Lake Superior and as far west as North Dakota. In their industries and mode of life they closely resembled the tribes who occupied the state of Illinois during the early historic period. The collection includes numerous mats, birchbark utensils, and twined bags, together with raw materials and tools for their manufacture. Flag mats, used as thatch for winter dwellings, and a mat of cedar bark, are of especial interest. A birchbark canoe from the same tribe, in a good state of preservation, was received as a gift

from Mr. F. W. Morgan of Chicago. Another birchbark canoe was given by Mr. C. H. Benjamin, West Lafayette, Indiana.

A collection of Nambiquara material was received from the Museum Nacional of Rio de Janeiro by exchange. The Nambiquara are a forest tribe of southern Brazil who, at the time this collection was made, were still living under conditions similar to the peoples of the stone age. They are rapidly disappearing on contact with the European, and will probably be extinct in a few years. Among the most interesting objects are arrows, clubs, bracelets made from the tail of the armadillo and a stone axe with its original haft.

A number of ethnological specimens from the Kiowa and Hopi, collected by the late Dr. James Mooney, for many years a member of the Bureau of American Ethnology, were acquired from his sister, Mother Mary Agnes, F. O. They include numerous examples of beadwork and basketry, as well as ceremonial objects. Of special interest are specimens of peyote. The peyote is a small cactus, growing on the Lower Rio Grande and in northern Mexico, which contains a powerful narcotic drug. When eaten, it produces hallucinations similar to those of hashish. An elaborate religious cult has been built up about its use by the Plains tribes. The collection is accompanied by a series of interesting photographs.

A small collection of ethnological material, which was acquired by purchase, consists of examples of Sioux metal work, and a number of miscellaneous specimens from the Eskimo of southern Alaska. A fine beaded saddlebag of buckskin has been presented by Mrs. Willard R. Wiley of Chicago. This bag was obtained many years ago by a relative of the donor, and is an unusually good example of Sioux beadwork. Two Mexican serapes or blankets made in the state of Oaxaca, Mexico, have been presented by Mr. P. M. Zulfer of Chicago, who for many years resided in Mexico. They are good examples of the present-day weaving, as practiced in that province, showing the combination of modern and primitive designs which now prevails. A large rug of white alpaca fur made in La Paz, Bolivia, is due to the interest taken in the Museum by Professor Archibald Gillis Baker. The Shasta Springs Hotel of Shasta Springs, California, presented through Mr. Edward E. Ayer a very interesting Indian mortar carved from lava. Mr. Alfred C. Dodman, Jr., of New York, manifested his interest in the Institution by offering a valuable pre-Columbian gold figure discovered in Central America and representing a rare mythological image. It has been added to the exhibits of prehistoric American gold in H. N. Higinbotham Hall. The Art Institute of Chicago presented to the Museum a bronze

bust of the Sioux Chief Sitting Bull modeled by Edward Kemeys. An interesting series of negatives taken by himself of the Seminoles of Florida, was donated by Mr. L. Winternitz of Grand Rapids.

**BOTANY.**—Among the notable collections received by the Department of Botany during the past year is the complete private herbarium of Edouard Jeanpert, consisting of about 35,000 sheets. The late M. Jeanpert, at times an assistant in the herbarium Cosson, was particularly interested, from 1887 to 1920, in amassing as full an herbarium as possible of the plants of the environs of Paris, both by extended field-work and by exchange. A search through ten of his 200 fascicles resulted in revealing the probability of his having secured large series of numerous French and Mediterranean Europe and Africa collectors. M. Jeanpert specialized in the Rubiads, Ranuncules, Saxafrages and the Ferns. His herbarium proved to be especially rich in these groups. Of the ferns, he evidently secured duplicates from all those collections represented in the Paris herbarium and those of Cosson, Franqueville and Drake. A glance through a few of the many large fascicles in his herbarium revealed, at least, plants of a large number of collections, many of which appear to be in complete series. Other collections of importance received during the year were Burchard's Plantae Canariensis; Knopf, Santa Catalina Island 500; Buchtien, Bolivia 158; Lloyd, Illinois 355; Clokey, Colorado 634; Peattie, Michigan, Indiana and Illinois 264; Gray Herbarium, New England and Nova Scotia 336; Dutton, Vermont, 587; Bush, Missouri 295; Blake, California 138; Ruth, Texas 529; Grant, Washington 145; and 3,205 South American Plants from the Herbier Museum l'Histoire Naturelle, Paris. The organized additions to the Herbarium and the total number of sheets of those localities to which additions have been made are as follows:

Locality	Added this Year	Total in Her- barium	Locality	Added this Year	Total in Her- barium
<b>NORTH AMERICA:</b>					
Alaska .....	23	152	Alabama .....	10	1,587
Agatta Island.....	5	5	Arizona .....	28	8,252
Atka Island.....	1	2	Arkansas .....	3	592
Attu Island.....	1	3	California .....	423	26,783
Baronoff Island....	10	25	Catalina Island....	1,967	4,890
Kodiak Island.....	1	1	Carolina, North .....	32	4,831
Kyska Island.....	1	1	Carolina, South .....	58	1,173
Saint Paul Island..	5	216	Colorado .....	751	13,694
Unalaska Island....	7	43	Connecticut .....	5	749
Canada .....	1	911	Dakota, North .....	29	693
Mackenzie .....	1	8	Dakota, South .....	4	1,887
Nova Scotia .....	95	534	Delaware .....	9	1,384
Ontario .....	73	2,474	District of Columbia.	31	2,766

Locality	Added this Year	Total in Her- barium	Locality	Added this Year	Total in Her- barium
Florida .....	55	20,524	MEXICO .....	138	31,938
Big Pine Key .....	1	4	Lower California .....	12	1,697
Georgia .....	6	4,017	Coronados Islands .....	11	31
Idaho .....	13	3,703	Magdalena Island .....	1	35
Illinois .....	484	29,220	San Benito Island .....	1	12
Indiana .....	274	7,286	Yucatan .....	1	6,762
Iowa .....	42	1,984	CENTRAL AMERICA:		
Kansas .....	129	1,435	Costa Rica .....	12	641
Kentucky .....	14	1,411	Gautemala .....	19	3,102
Louisiana .....	72	1,467	Nicaragua .....	1	240
Maine .....	215	1,591	Panama .....	63	242
Maryland .....	87	1,816	Canal Zone .....	20	85
Massachusetts .....	380	5,846	San Salvador .....	4	30
Michigan .....	188	4,155	SOUTH AMERICA:		
Isle Royal .....	2	12	Argentina .....	5	1,378
Minnesota .....	7	2,392	Bolivia .....	162	4,558
Mississippi .....	14	2,097	Brazil .....	259	981
Missouri .....	586	4,802	Chili .....	38	297
Montana .....	25	4,241	Colombia .....	32	3,003
Nebraska .....	7	1,068	Ecuador .....	11	863
Nevada .....	174	1,488	Galapagos Islands .....	3	4
New Hampshire .....	69	1,679	Albemarle Island .....	1	62
New Jersey .....	101	3,680	Indefatigable Island .....	1	9
New Mexico .....	102	3,961	Guiana, British .....	3	77
New York .....	210	8,210	Guiana, Dutch .....	14	18
Ohio .....	64	2,225	Guiana, French .....	3	5
Oklahoma .....	19	343	Patagonia .....	2	29
Oregon .....	34	9,049	Peru .....	70	232
Pennsylvania .....	24	10,294	Uruguay .....	5	175
Rhode Island .....	15	617	Venezuela .....	26	736
Tennessee .....	9	1,387	Curacao .....	1	102
Texas .....	605	10,632	Trinidad .....	69	712
Utah .....	40	4,139	EUROPE:		
Vermont .....	625	4,304	Austria .....	300	8,255
Virginia .....	294	5,169	Belgium .....	52	359
Washington .....	185	7,951	Denmark .....	6	380
West Virginia .....	94	2,283	England .....	18	2,566
Wisconsin .....	54	5,334	Finland .....	60	180
Wyoming .....	4	1,705	France .....	71	8,490
BAHAMA ISLANDS:			Germany .....	1,509	10,779
New Providence .....	10	2,459	Greece .....	2	706
Turks Island .....	1	12	Holland .....	8	30
WEST INDIES .....	3	22	Italy .....	112	3,690
Antigua .....	1	14	Sardinia .....	14	47
Barbados .....	1	346	Montenegro .....	2	2
Cuba .....	74	11,248	Norway .....	16	1,235
Guadaloupe .....	1	1,036	Portugal .....	160	256
Jamaica .....	215	9,247	Russia .....	2	1,629
Martinique .....	4	624	Scotland .....	1	587
Porto Rico .....	214	4,953	Spain .....	3	638
Saba, Little .....	1	1	Sweden .....	23	9,819
Saint Martin .....	1	1	Switzerland .....	287	4,171
Saint Thomas .....	2	622	Turkey .....	1	22
Santa Lucia .....	1	3	Wales .....	2	101
Santo Domingo .....	4	1,327			
Tobago .....	11	894			
Tortola .....	1	80			

Locality	Added this Year	Total in Her- barium	Locality	Added this Year	Total in Her- barium
AFRICA:	2	162	Palestine	3	1,152
Abyssinia	2	228	Persia	6	56
Algeria	1	566	Siberia	4	476
Canary Islands	1	47	Syria	1	466
Palma Island	1	1	Turkey	5	30
Teneriffe Island	2	114	AUSTRALIA:	1	2,238
Cape Colony	73	1,901	New South Wales	26	754
Egypt	1	47	Victoria	2	438
Madeira Island	28	135	Tasmania	1	311
Mozambique	9	33	OCEANIA:		
Nubia	5	16	Java	2	119
Soudan	2	2	Samoa	1	69
ASIA:			Timor	15	19
Arabia	4	24	HORTICULTURAL:	11	3,369
China	7	2,267	ILLUSTRATIONS:	5,563	7,315
India	4	1,077	IGNOTA:	12	1,333
Bengal	1	3			

GEOLOGY. Judge George Bedford of Morris, Illinois, presented the Department of Geology with 381 specimens of fossil plants from the beds of Mazon Creek, Illinois. These specimens exhibit the fine preservation characteristic of fossils from this locality, and, in consequence of lessening production of these beds, as well as the intrinsic value of the specimens, are highly prized additions. Eight specimens of ammonites and saurian remains from the Fort Benton beds of Kansas were presented by Mr. F. M. Jewell, and Mr. R. K. Thomas presented 45 specimens of invertebrate fossils from Arizona. To the crystal collection, through the generosity of Mr. William J. Chalmers, 281 crystal models, showing the ideal forms of as many natural crystals, were added. Mr. Edward E. Ayer presented a set of nine photographs which illustrate methods of construction of a model of Yellowstone Park. These will be of assistance in preparing similar models here. The Standard Oil Company (Indiana) added, during the year, to the series of petroleum products which they had previously presented, 182 specimens of lubricating oils, greases and candles. The same donors also provided glass containers for the exhibit. These, together with the previous donations from this company form a complete series illustrating the various stages of the distillation of petroleum and the products obtained therefrom.

Mr. Austin Q. Millar made a gift of 25 specimens of the typical diamond-bearing rocks of Arkansas and the minerals which accompany the diamond there. Mr. George Tollefson presented an unusual specimen of botryoidal malachite which he collected at a copper mine in the Belgian Congo, Africa. A peat from Russia given by Mr. Marcus

Hill is a welcome addition to the peat collection, as it represents a locality where this material has recently come into extensive use. Mr. H. K. Thurber gave five specimens of high-grade radium and vanadium ores from Utah and Colorado. From the United States Gypsum Company there was received a carefully prepared series numbering 48 specimens, illustrating industrial products obtained from gypsum and their uses. This collection combines features of attractiveness and instruction in an unusual degree. The most important accession by purchase was that of an iron meteorite, from Navajo, Arizona. This is a mass weighing 3,306 lbs. and is the largest meteorite specimen now in this collection. In addition to its size, it has other interesting and unusual features. Another entire iron meteorite, a new fall weighing 26 lbs., was obtained from Dungannon, Virginia.

ZOOLOGY. The accessions in the Department of Zoology, though neither large nor numerous, were, nevertheless, of considerable value. The very extensive collections obtained by the Museum's expeditions in Peru have not yet been received. Among the mammals, the most noteworthy accessions were two Alaska mountain sheep, presented by Mr. William Rindsfoos of Columbus, Ohio; two mountain sheep obtained by Mr. W. J. Morden of Chicago, in the Yukon and given to the Museum; and two Mexican mountain sheep, a gift from Dr. A. P. Chesterfield of Detroit, Michigan. Mr. Carl Akeley presented four white-tailed deer. Forty-seven mammals were obtained by the Museum's botanical expedition to British Guiana. The most valuable bird acquisition, by purchase, was a passenger pigeon, which was killed in Indiana about fifty-two years ago. This species, which only a generation ago was exceedingly abundant, is now extinct. The few specimens that are still in the hands of private owners are gradually being acquired by various museums. Another acquisition, also by purchase, was a collection of 132 birds from Illinois, Alaska and New Zealand.

A notable gift from Mr. Ashley Hine consisted of fifty well prepared birds from western Canada. The greater part of this donation can be used to advantage in replacing some of the rather poorly mounted specimens in the exhibit of birds arranged systematically.

Although most of the fishes acquired were obtained by means of expeditions, some very desirable acquisitions were received from other sources. An accession of 1,784 Panama salt-water fishes represents the final division of the results of the Museum's participation in the ichthyological survey of the Isthmus of Panama. A collection

consisting of 2,797 specimens was obtained on Museum expeditions working along the Dupage, Kankakee, Illinois and Mississippi Rivers. Important donations were made by the Booth Fisheries Company. One of these was a large "fat bass," weighing over three hundred pounds and measuring over six feet in length. It was taken at a depth of 1,476 feet in the Pacific Ocean. Other welcome gifts, from the same source, were a large halibut weighing, when dressed, a hundred and ten pounds; a king salmon caught in Lake Michigan, where this Pacific Coast species has been successfully introduced; starry flounders, one of the most showy of the flounder group; and a rat-fish, a representative of a group probably older than the one containing the sharks. From the Tuna Club, Catalina Island, through the much appreciated kindness of Mr. Keith Spalding, some very interesting game fishes have been received, among them being a sheepshead, albacore, California white bass, California yellow-tail, California barracuda and a skipjack.

Over 290 specimens of reptiles and amphibians were received from Museum expeditions. Of this number, seventy-nine are to be credited to the botanical expedition to British Guiana; forty-nine to the work done by Mr. Weed and Mr. Pray on the Illinois and Mississippi Rivers, and 165 to local field work by various members of the Department. One of the important gifts, received from the Museum of Comparative Zoology, consisted of fifty lizards from the Fiji Islands. All of the species represented in this acquisition were new to the collection. Other noteworthy acquisitions were a gift of 106 specimens from Florida and Texas, received from the Aquarium of Rothschild's Department Store, through the courtesy of Mr. F. S. Young; and 115 specimens from Indiana, donated by Mr. L. L. Walters. Of the limited number of skeletons accessioned, ten were obtained through various expeditions, while five were gifts from various donors.

Among the insects accessioned were several acquisitions worthy of mention. By purchase, there were received 225 specimens, mainly beetles, from South Cameroon, Africa. This lot included four perfect examples of the goliath beetle. The Museum's collection of hawk-moths was further increased by a donation of thirty specimens by Mr. B. Preston Clark of Boston. From Dr. C. E. Hellmayr sixty butterflies and four moths from the highlands of central Europe were received as a gift. By means of local field trips, some very desirable specimens were also obtained. The total number of accessions is 6,666, distributed as follows: Mammals, 98; Birds, 268; Fishes, 4,850; Reptiles and Amphibians, 641; Skeletons, 15; Insects, 924.

## EXPEDITIONS

The year was notable for an unprecedented activity in the field, the importance of which cannot easily be overestimated. As many as twelve expeditions of major importance, representing all the departments of the Museum were sent out, eight of which operated in South America which had been selected as a special field for exploration. In addition to the expeditions previously mentioned, an expedition, in which Field Museum is cooperating with the University of Oxford, England, has been dispatched to Mesopotamia to explore and excavate the ancient city of Kish, from which important results are expected.

ANTHROPOLOGY. The Department of Anthropology at present has three expeditions in the field. Assistant Curator J. Alden Mason left Chicago on the 10th of April for the purpose of making an archaeological survey of Colombia. Arriving at his destination at Santa Marta toward the end of April, he has since conducted a very active and successful campaign, travelling along the coast by canoe and over unbroken tracks in the interior of the country. Near the Cape of San Juan de Guia he discovered the extensive ruins of an ancient city, which possessed stone-paved roads, where he camped for three months. At the end of August, when the work on the best sites was completed, he proceeded by canoe to the bay of Gairaca, where he explored an old Indian cemetery in which he found an enormous number of burial urns of immense size, many of which contained fine objects of stone, shell, bone or metal. From there he proceeded to Nahuange, the next bay to the east, where three or four very large mounds yielded excellent results. He found a dozen pottery vessels of artistic quality, among which were the first jars with painted decorations he had so far discovered. They contained upwards of 8,000 carnelian beads, a number of exceptionally fine gold objects, and remarkable ornaments and figurines of a translucent mottled green stone which outwardly resembles jade. In early December the expedition was based on Bonda, a small village, a few miles inland from Santa Marta, formerly the center of a large Indian population. Dr. Mason expects to remain in the field until the end of next April to continue and complete his work in Colombia, and particularly to undertake excavations in Pocigueca, the old capital of the Indians, which is situated in the mountains near Santa Marta. He has already made several shipments to the Museum amounting to some three thousand specimens, which include pottery, gold ornaments, necklaces of stone and shell beads, very fine stone implements, and carved figurines. Several hundred negatives have also been received.

In view of the fact that the Museum possesses extensive collections from the Philippines on the one hand, and from the Melanesian Islands on the other, it was proposed as the next logical step to fill the gap between these two areas by engaging in intensive work in the Malay Archipelago. The culture of the Philippine tribes can be fully comprehended only in connection with that of the other branches of the Malayan family, and must be correlated with the history of the entire stock. Research was therefore recommended in the Malay Peninsula, Sumatra, Java, and Borneo for the purpose of shedding more light on the early history of the Philippines, and the movements and migrations of the Malayans in general. At the same time it was proposed to secure representative collections adequately illustrating the life, industries and religions of these peoples.

In consideration of his former experiences in the Philippines, Assistant Curator Cole was appointed head of the Malaysian expedition, which will remain in the field for a period of approximately eighteen months. Dr. Cole left Chicago on the 10th of June for a brief visit to England and Holland for the purpose of benefiting by the advice of ethnologists familiar with the Malayan field, and studying collections from this quarter in the museums abroad. He reached Singapore on the 7th of September and proceeded from there to Kuala Lumpur, the capital of the Federated Malay States. Accompanied by Dr. Robinson, director of the States Museum, he made an excursion into Pahang, the heart of the country of the Sakai, who live in small scattered groups in the high mountains. He spent ten days there gathering information and accumulating material. Subsequently he paid a visit to the state of Perak for the purpose of studying the Semang and the Malay. At Kuala Kangsar, the home of the Sultan of Perak, he succeeded in obtaining such beautiful material, as rich embroideries, fine sarongs and other cloths, some excellent silver, brass, and iron work, and even a royal sarong from the palace. A shipment of nine boxes has been advised by him. Afterwards, he proceeded to Batavia, and from there to Padang, Sumatra, where he is at present engaged in work among the Menangkabau.

The Mesopotamia Expedition was organized to excavate the ancient capital of Sumer and Akkad, eight miles east of the city of Babylon. The ancient name of this locality was Kish; at present it is known by its Arabic name Tell El-Ohemer. Kish was the seat of the oldest dynasty known in history, and was also the seat of three more powerful later dynasties which ruled all Western Asia from 4500 B.C. to 2800 B.C. After that period, Kish occupied a prominent place in the history of

Babylonia until Babylonian history came to a close in the fifth and fourth centuries B.C. The mounds of ancient Kish probably contain the remnants of one of the earliest periods of mankind and the relics of an ancient civilization extending over a span of more than four thousand years. It is expected that the work of this expedition will yield exceedingly interesting and important results, and will shed light on the earliest phase of the cultural life of mankind in Babylonia. It is also a novel departure for the Museum, in that the civilizations of Mesopotamia have not yet been represented in its collections. The expedition is under the supervision of Professor S. H. Langdon, head of the Department of Assyriology, Oxford University and a prominent scholar in Semitic philology. A party of excavators left England for Bagdad at the beginning of November, and is expected to remain in the East for a period of three years.

**BOTANY.** Three expeditions of major importance were undertaken by the Department of Botany during the year. Mr. J. F. Macbride and Mr. William Featherstone were commissioned to collect botanical material in Peru. They sailed from New York, on March 22nd, and arrived at Lima, Peru, on April 3rd, where eight days were spent in making arrangements for work in the interior. During this time, acquaintance was made with Doctor A. Weberbauer, a Peruvian collector of many years' experience in the region, and also with Doctor R. Aspiazu and Mr. Albertio Peri. Much valuable assistance and information concerning the interior were obtained from these gentlemen. On April 12th the Expedition left for Matucana, six hours from Lima, and at an altitude of 8,000 feet. Five hundred (500) numbers were secured at this point, after which the Expedition joined that of the Department of Zoology in the hills at Chosica, where Mr. Macbride, finding the region very interesting from a botanical standpoint, remained, while Mr. Featherstone, with the heavier botanical equipment, went on with the Zoological party to establish a base at Huanuco, sixty miles down the Huallaga River from Cerro de Pasco. Mr. Macbride continued collecting at Viso and at Rio Blanco, 11,000 feet altitude. At these two points about 400 specimens were procured, after which he moved on to Casapalca from whence side trips were made to Morococha and Yauli. At the latter place snow and sleet fell daily. After three days' collecting, he moved on to La Oroya and later to Tarma and San Jose. Through the kindness of M. Paul Adrien and M. Jullier of the Huaron Mining Company, he was enabled to collect at Shelby, five hours distant.



A HUGE FRUIT CLUSTER OF *Attalea* PALM.

THIS IMPRESSIVE SPECIMEN OF OVER 3,000 FRUITS WEIGHED 240 POUNDS.

STANLEY FIELD BRITISH GUIANA EXPEDITION.



At San Jose, Sr. Galjuf, a coal mine owner, very hospitably entertained Mr. Macbride, and generously made him a loan of four horses and an arriero to take him to Huanaco, 120 miles distant. During the journey, stops were made at Mina Ragra, (altitude 15,700 feet) and at Andachaca, Yanahuanca, Uspachaca, Hacienda Cabello, Hacienda Huertas, Hacienda Ambo and at Hacienda Chinche. A number of side trips were made from each of these stations, several of which necessitated remaining out on the plains over night in very cold weather. Reaching Huanaco, the arriero and horses were sent back to Sr. Galjuf, and work was continued at this point with side trips to Mito, collecting at the latter place until August 16th. A journey was also made from here, on foot, to Llata, sixty miles to the west on the river Maranon, returning September 1st. From Mito the upper Huallaga river was followed to its source near Cerro de Pasco. The expedition returned from there to Huanaco, where preparations were made to proceed to the coast at Casma, instead of returning to Lima by rail. Leaving Mito on September 27th, the expedition proceeded on foot, with three pack mules, over the trail to Huaraz on the western side of the Andes, where it arrived October 5th. Leaving Huaraz on October 7th, with horses, for Casma, the trip over the coastal desert region proved so hot that night travel became compulsory. Collections were secured at twenty-seven different localities between Mito and Casma. From there the expedition shipped on the 11th of October on a local steamer for Callao, where it transhipped for New York on the 13th, arriving at the latter place on October 27th. The expedition secured in all 2,576 numbers, including about 7,000 specimens, of which 100 were economic material such as native foods, fibers, sugars, "flours" used as bases for native drinks, as well as crude articles of native manufacture.

An expedition, financed by the President of the Museum, was sent to British Guiana, particularly for the purpose of securing botanical exhibition material and studies for the plant reproductions in the Department of Botany. Doctor B. E. Dahlgren, with Mr. J. R. Millar as aid, were absent from the Museum for about six months. Grenada, Trinidad and Dutch Guiana were visited, but most of the time was spent in British Guiana. The privileges of the Botanic Garden at Georgetown were generously extended to the expedition, for which thanks are due, particularly to Mr. W. Francis, Acting Director, Department of Science and Agriculture, British Guiana, and to Mr. H. Ward, Superintendent of the Garden. Mr. Chester N. Davies, American Consul in Georgetown rendered efficient aid in connection with the

customs formalities. A small cottage within a short distance of the Botanic Garden was rented to serve as a laboratory and headquarters. A dark-room was improvised for the photographic work, and the bulk of the collections was assembled there. Large pieces which required more space for storage and facilities for handling, drying and packing were generously accommodated by Messrs. Sproston's Ltd., at their wood-working mills.

Two hundred and thirty-five plaster moulds, 427 economic specimens and 52 branches were accumulated, which will serve as a basis for plant reconstructions or reproductions for the botanical exhibits. Among these subjects are such interesting forms as the Cannonball tree (*Couroupita*); the large flowered *Clusia*; the marantaceous *Mucro* (*Ischnosiphon*), which furnishes the Guiana Indians with their principal basket material; the curiously developed fruit of the Cashew with its seed hanging exposed below the fleshy, edible peduncle; *Dillenia* and *Lagerstræmia*, both East Indian trees, but found cultivated in the American tropics; a banyan-like Willow Fig (*Ficus Benjamina*); and a small *Courida* tree with its remarkable aerial roots or pneumatophores. A chocolate tree was secured from the Fernandes Estate at Coveden. A considerable number of herbarium specimens and economic material were collected in Georgetown and in Surinam, and 975 negatives were made. Arrangements were made in Dutch Guiana for government cooperation in securing a collection of Surinam woods, and an agreement was made with a local collector in British Guiana to continue collecting herbarium and economic specimens for the Museum. Some geological and a number of zoological specimens were obtained, among them an Anaconda, a "labba" (*Coclogenys*) and an "Agouti" (*Dasyprocta*) which were brought home alive. The two latter were presented by the Museum to the Lincoln Park Zoological Gardens. The bulky collections were most carefully packed and reached Chicago in excellent condition.

As palms form a conspicuous feature of the flora of the Guianas, and the Botanic Garden and public grounds of Georgetown are rich in introduced species, advantage was taken of the opportunity to secure an extensive collection of dried flowering and fruiting palm spadices, which, together with leaves and photographs of each of some hundred species, form a most valuable and desirable accession to the exhibition and study collections. Conspicuous among them are an entire dried fruit cluster of the Ita Palm, dried flowering spadices and fruit clusters of two species of *Attalea*, and a perfect specimen of the rarely seen male flowering spadix of the double or Seychelles coconut.

The reason that such striking objects are seldom seen in museums is no doubt to be found in the difficulties of drying and packing for shipment. Clusters of palm fruits, when drying, have a habit of shedding their fruits. It was found that this could be prevented to a large extent by a preliminary killing of the tissues by means of a brief boiling. A vat in a cooperage was utilized, thus rendering it possible to treat even the largest pieces in this manner.

The Curator of the Department of Botany spent seven weeks, in September and October, working on South American plants in the herbaria at Paris and London. While at these institutions he was fortunate in arranging exchanges through which this Museum will receive a large amount of material of the earlier collectors in Colombia, Ecuador, Peru and Brazil. Of these, over 3,000 specimens have already been received.

**GEOLOGY.** Early in the year, the Curator of Geology visited Navajo, Arizona, to examine a meteorite that had been found there. It proved on examination to be a mass of much interest, and negotiations were entered into, which resulted in its being acquired by the Museum. The surroundings of the place of fall of the meteorite were carefully examined, and a full series of photographs of the locality was made.

During the year the Curator spent several months collecting in Brazil. It was desired to secure as full a series as possible of the important minerals and ores of that country, and this object, so far as the opportunities afforded by a single season would permit, was fully attained. Starting from Rio de Janeiro with a companion, Ouro Preto, the former capital of the State of Minas Geraes, and the center of much of the mining industry was reached by rail. Here collections were made in the topaz district, and about the manganese mines of Burnier and the gold mines of Passagem and Morro Velho. Travel was then continued on mule-back for a distance of about 250 miles to Diamantina, passing through the vast iron ore fields about Itabira do Matto Dentro and Conceicao, visiting the aquamarine and other mines of the pegmatites of Brejauba and Serro, and several more or less abandoned gold and diamond workings of the Caraca quartzite. Some of the diamond mines in the vicinity of Diamantina were visited and collections made of the typical diamond-bearing rocks and satellites of the diamond. Numerous specimens of optical and other quartzes from various localities in the Serra do Cabral were also collected. Returning to Rio de Janeiro, a journey was made to the basin of eruptive rocks in Caldas

in the northern part of the state of Sao Paulo, where a full series of the remarkable deposits of zirkite and the syenitic rocks of that area were collected. In all, about 1,000 specimens of typical gems, minerals and ores of Brazil were collected. The specimens included large topazes, aquamarines, quartzes and citrines, and full representations of the characteristic gold, iron, manganese and aluminum ores of the region. About one hundred and fifty negatives, illustrating mineral occurrences or other features of the regions visited, were also made.

Active collecting in vertebrate paleontology was also resumed. Two able and experienced collectors, Mr. George M. Sternberg and Mr. J. B. Abbott, were engaged, and under the direction of Associate Curator Riggs, two successive expeditions for collecting vertebrate fossils were made during the year. The first expedition, leaving the Museum in the latter part of May, operated in Canada for about three months. The purpose of this expedition was the acquisition of fossil dinosaurs in the basin of the Red Deer river in the Province of Alberta. Two nearly complete skeletons and some leg bones of several "duckbill" or Trachodont dinosaurs were secured, also a portion of a skeleton of a carnivorous dinosaur, a good skull of a "crested" dinosaur and an incomplete skull of what appears to be a hitherto unknown species of dinosaur. A fossil trunk of a Sequoia tree, 37 feet long and averaging about 18 inches in diameter, was another valuable specimen obtained, a peculiar feature of this specimen being, that while the heartwood or interior wood was silicified, the sapwood was in part changed to lignite. Carapaces and plastrons of four fossil turtles and about 100 specimens of invertebrate and plant fossils were also obtained in the region. Much of the material obtained was in localities so distant from established highways that considerable time and labor had to be devoted to building temporary roads. The total weight of specimens, which have been received at the Museum as a result of the work of this expedition, is about ten tons.

After returning from Alberta, Messrs. Riggs, Sternberg and Abbott sailed for Buenos Aires about the middle of November, for the purpose of collecting in Argentina specimens of the large Pleistocene vertebrates and their ancestors that are to be found in that country. During the southern summer the party proposes to visit southern Patagonia and work northward as the winter advances. As the party did not reach the field until the latter part of December, no results from this expedition can be reported as yet.

Associate Curator Nichols spent about a week in the vicinity of

LaSalle, Illinois, making photographs and securing data for constructing a model of a cement plant. Advantage was taken of the opportunity to obtain representative specimens of several forms of concretions, shales and limestones characteristic of the region.

ZOOLOGY. Preparations for zoological expeditions were begun early in the year and it was decided to continue in Central Peru, work which was begun there in 1912. Accordingly, Mr. J. T. Zimmer, Assistant Curator of Birds, sailed from New York on March 22nd, and three weeks later, on April 12th, Mr. Edmund Heller, Assistant Curator of Mammals, and Mrs. Hilda Hempel Heller sailed to join him. This party worked in cooperation with the botanical expedition to the same region conducted by Mr. J. F. Macbride and Mr. William Featherstone. They sailed direct to Callao, Peru, and, after brief preliminary work on the arid western slopes of the Andes, proceeded by rail to the elevated mining town of Cerro de Pasco, and thence down the eastern slopes of the mountains. Having organized for travel, they worked independently, Mr. Heller devoting himself to the collection of mammals, Mrs. Heller assisting him and giving special attention to photography, while Mr. Zimmer made collections of birds. They arranged to work intensively in the region about the headwaters of the three important tributaries of the Amazon, the Maranon, the Huallaga and the Ucayali. Bases were, therefore, established at the small towns of Ambo and Huanuco and successive excursions were made into the valleys of the three rivers mentioned and to the partly isolated highlands lying between them. It was thus possible to work from as great a height as 15,000 feet down to the hot forests on the Amazonian plain, covering a range of physical conditions of great variety. These plans were successfully carried out, and as this report is being written, the expedition is moving eastward to work in the Upper Amazon Valley above Iquitos, whence it is expected to return early in 1923. Owing to uncertainties of transportation in remote regions, it was deemed advisable to store the collections until they could be escorted to the railroad for shipment. Therefore, nothing has so far been received from the expedition. The importance of the collections cannot be fully judged until they have been studied, but, so far as reported, they will surpass, both in extent and importance, any similar collections previously made in Peru. They will, apparently, number 3,000 or more actual specimens, among them being many rare and some unknown animals.

In continuation of the Museum's exploration of South America, the

Curator of Zoology, accompanied by Mr. C. C. Sanborn, Assistant in the Division of Birds, and Mr. Boardman Conover, sailed on November 16th from New York, via Panama, for Valparaiso, Chile. This expedition will give its attention to the fauna of southern and central Chile, including some large, but little worked, islands along the coast. Mr. Sanborn will collect principally in Chile, and will remain in the field throughout the year 1923. The other members of the party, after working in Chile, will visit important points in Argentina, Uruguay and Brazil, and return to Chicago late in 1923.

In addition to expeditions sent to distant regions, several were also made to neighboring districts. Worthy of special mention were the results of one, made by the Assistant Curator of Fishes and the fish taxidermist, along the Illinois and Mississippi Rivers. On this expedition, 1,080 specimens were obtained, as well as plaster casts and color notes needed to reproduce some of the most interesting species.

The following list indicates the various expeditions sent out during the year:

COLOMBIA . . . . .	J. Alden Mason	Archaeological Collections.
MESOPOTAMIA . . . . .	S. H. Langdon	Archaeological Collections.
MALAYASIA . . . . .	Fay-Cooper Cole	Ethnological Collections.
PERU . . . . .	J. F. MacBride and Wm. Featherstone	Herbarium and Economic Specimens.
BRITISH GUIANA . . . . .	B. E. Dahlgren J. R. Millar	Herbarium and Economic Specimens.
ALBERTA, CANADA . . . . .	Elmer S. Riggs J. B. Abbott and G. M. Sternberg	Paleontological Specimens.
BRAZIL . . . . .	O. C. Farrington	Gems, Ores and Minerals.
PATAGONIA . . . . .	Elmer S. Riggs J. F. Abbott and G. M. Sternberg	Paleontological Specimens.
PERU . . . . .	J. T. Zimmer	Birds and Eggs.
PERU . . . . .	Edmund Heller Mrs. Hilda Hempel Heller	Mammals.
CHILE, ARGENTINE, URUGUAY AND BRAZIL . . .	W. H. Osgood C. C. Sanborn and Boardman Conover	Mammals and Birds.
MISSISSIPPI RIVER . . . . .	A. C. Weed and L. L. Pray	Fishes and Reptiles.



ANACONDA. WATER BOA.  
COLLECTED BY STANLEY FIELD BRITISH GUIANA EXPEDITION. CELLULOID REPRODUCTION BY L. L. WALTERS.



## INSTALLATION, RE-ARRANGEMENT, AND PERMANENT IMPROVEMENT

ANTHROPOLOGY. In the Department of Anthropology ninety exhibition cases were newly installed during the year. The total number of cases at present on exhibition in the halls of the Department, inclusive of the new Halls I and J on the ground floor, amounts to 744. Busts of prehistoric races of man, modeled by Professor McGregor of Columbia University, have been installed in Case 3, Stanley Field Hall. The Pithecanthropus erectus of Java, the Neanderthal man of La Chapelle-aux-Saints and the Cro-magnon man of western Europe are shown there, together with a series of casts of skulls. Another addition made to Stanley Field Hall is the green-glazed pottery mastiff presented by Mr. Martin A. Ryerson, which is placed in Case 7. The Roman bath-tub formerly in Case 3 has been removed into Edward E. Ayer Hall.

In consequence of the new plan to concentrate all the Egyptian collections in a specially constructed room on the ground floor, Edward E. Ayer Hall was subjected to a thorough revision. Nine standard cases containing Egyptian antiquities and seventeen special cases containing Egyptian mummies were conveyed from there to their new quarters. To take their place, five cases were newly installed, two containing reproductions of Irish antiquities, and three displaying Roman lamps and candelabra, and red-figured vases from Italy. While in the previous arrangement the cases were three abreast, they are now arranged in pairs, which has considerably improved the appearance of the hall, which now shelters 42 cases, instead of 62 as formerly. For the Roman frescoes, new labels were prepared and installed, and twenty-two reproductions of antique furniture on wooden bases have been distributed between the pilasters.

In Hall 4, six cases containing Nootka, Athapascan and Coast Salish material were re-installed, and the labeling both in this and Mary D. Sturges Hall was completed. During the year the extensive Plains Indian collections of the Museum in Hall 5 have been re-organized, and in large part re-installed by Assistant Curator, Ralph Linton, who assumed his duties on February 1. Twenty-eight newly installed cases have thus far been placed on exhibition. The tribes of this region fall into three divisions. On the eastern edge of the Plains and along some of the rivers were settled tribes which tilled the ground, and whose culture had much in common with that of the tribes of the wooded country farther east. The central region was occupied by

nomadic tribes devoted to hunting, who practised little or no agriculture, and subsisted principally on the buffalo. Their culture was distinctive, and its affiliations have never been satisfactorily established. On the western edge of the Plains lived still other tribes whose culture was intermediate between that of the central tribes and that of the Indians of the Rocky Mountain plateau. The new arrangement of Hall 5 is designed to emphasize these differences, and to enable the visitor to receive and carry away a clear idea of the mode of life of each of these three divisions. The south section of the Hall is devoted to the hunting tribes of the central region, the Cheyenne and Arapaho being taken as typical representatives of this group. These two tribes were in close alliance for many years; their ordinary artifacts and method of life were identical. Beginning at the west end of the Hall, the visitor is shown, first, the utilitarian side of their culture, with exhibits illustrating their appliances for travel and hunting, their tools and utensils, their clothing, ornaments and weapons, as well as their dwellings and household furniture. Following these are exhibits which illustrate their religious life. Various objects used in the Sun Dance are displayed, together with a collection of the insignia of the men's and women's societies that is nearly complete. These insignia are of special interest, several of the objects being the only specimens of their kind now in existence. The last four cases on this side are devoted to the Crow, a tribe living to the north of the Cheyenne and Arapaho, and differing from them in minor details only. The collection has been so arranged as to emphasize these variations, which are most marked along the line of costume and decorative art. A new group, consisting of a Crow woman in festive dress leading a horse decorated with full trappings, has been installed in the central aisle. The northwest quarter of the Hall contains material from the Blackfoot, Assiniboin and Dakota tribes of the Central Plains, which also differed in some respects from the Cheyenne and Arapaho. The exhibits are especially designed to illustrate these features which were distinctive in the culture of each tribe. The Dakota form a link between the tribes of the Central Plains and those of the eastern border, their western bands being nomadic hunters, and their eastern settled agriculturists. Because of the pressure of the whites, many of the eastern Dakota joined their nomadic relatives, and objects of eastern origin were thus carried far out into the Plains. A number of such objects is shown, including medicine bags of a form characteristic of the central Algonquins. The central portion of the north side of the Hall is devoted to the various village tribes of the Plains. The Osage

have been chosen as typical of a number of Sioux tribes living on the eastern edge of the area. Many of their artifacts, notably their woven bags and sashes, bear a strong resemblance to those made by the Woodland tribes still farther east, which are shown in the adjoining section of Hall 4. The Arikara serve as representatives of a group of three settled tribes, the Mandan, Hidatsa, and Arikara, who formerly lived on the upper Missouri. They built large permanent houses, manufactured pottery, and also made a peculiar form of carrying basket, similar in its weaving to the basketry of the southeastern forest tribes. Examples of both their pottery and basketry are placed on exhibition. The life of the Pawnee and Wichita, tribes of the same linguistic stock as the Arikara, who lived farther to the south, is illustrated by representative collections. These tribes were remarkable for the high development of their religious beliefs and ceremonial observances, and the exhibits include sacred bundles and other objects of paramount interest. Material from the Ute, Bannock, and Shoshone has been placed in the northeast section of the Hall, adjoining the collections from the Plateau tribes exhibited in Hall 4. These three tribes seem to have moved out into the Plains in comparatively recent times, and their culture shows a blend of features characteristic of the tribes of the Plains and Plateau area. They differ from the Central Plains tribes principally in their extensive use of basketry and in their retarded social and religious development. The arrangement of the collections attempts to demonstrate these diversities. In Hall 6 a case of Apache clothing has been re-installed more effectively.

Twenty-one cases have been removed from Joseph N. Field Hall, for the purpose of obtaining more space and of opening up the central portion. All the old false-back cases will be eliminated and replaced by screen or shelf cases. In order to retain the representative character of these valuable collections it will be necessary to reinstall most of the cases, but the material will be considerably condensed in the process. Three new cases dealing with New Ireland, the Admiralty and Solomon Islands have already been installed with material taken from six old cases. In this manner room will be made for several cases of new material, not yet exhibited, from New Guinea and some of the surrounding islands. The installation of a special hall of Oriental Theatricals on the ground floor necessitated the removal of twelve cases from Hall 24. A quantity of Chinese material was also released from storage, and nine new cases were installed as follows: Ancient bone carvings, seals and amulets; bronzes of the Sung, Ming and Manchu periods; decorative bronze, chiefly censers and

candlesticks illustrating representations of animals; cloisonné enamel, painted enamel, iron and bronze inlaid with gold and silver wire; household objects of tin, including a set given as dower to a Peking bride; carvings of wood, bamboo, roots, ivory and lacquer; hide armor, weapons and utensils of the Lolo (cf. p. 97); Buddhist stone sculpture of the Sung, Ming and Manchu periods; and Buddhist votive figures of bronze, gilt bronze and clay of the early periods (Cases 1A, 22-24, 26, 37, 49, 56). The addition of these cases resulted in a new and improved arrangement of the Hall. Fifteen maps were placed in the twelve cases on the south gallery containing the models of Chinese pagodas, the locality of each pagoda being indicated on the map. One of the Chinese screens deposited by Mrs. Marshall Field, Sr., is shown in Room 23.

The William Wrigley and Arthur B. Jones collection of Indian sculpture will be assembled in a single standard case and placed in Hall 32 in order to ensure its proper geographical setting. The Tibetan bone apron, presented by Mr. Jones, will be found in Case 74. To this Hall was also added a new case containing the Tibetan stone sculpture obtained by the Blackstone Expedition. These pieces have not been exhibited before and are exceedingly rare. Owing to the removal of Japanese exhibits into Frank W. Gunsaulus Hall, it became necessary to modify the arrangement of the central portion of Hall 32. The gap was filled by two cases installed with shields and weapons, copper, brass and bidri ware from India. Four stone statues from Java, an old acquisition of the Museum, were likewise placed on exhibition, and the gold image, received from the Philippines this year, is shown in H. N. Higinbotham Hall. All cases in this Hall, as well as in Hall 24, were renumbered. The moving of cases in the former Hall for the purpose of recalculating the walls necessitated rearrangement of specimens in the nine wall-cases.

Room 33 in the northwest corner of the second floor, formerly named Frank W. Gunsaulus Hall, proved too small to contain all the Japanese collections of the Museum. After the removal of the Library to the third floor, provision was made for this section to be accommodated in Hall 30 in the southeast corner of the second floor. These two rooms are now known as Frank W. Gunsaulus Hall, and were thrown open to the public on the 5th of August. Both the old and new acquisitions from Japan are here exhibited in thirteen cases, the smaller room being assigned to a display of surimono. The large tapestry representing a procession to the temples of Nikko, which had been withdrawn from exhibition for several years, has been re-instated to its former prom-

inence. The Gunsaulus collection of Japanese sword mounts has been re-installed in two cases specially built in the Museum. This collection was received in 1916 and was installed by the curator in 1917 in two standard cases which held the entire collection. It was deemed advisable, however, to adopt a selective method in dealing with them, and 228 guards and 118 smaller mounts with six mounted swords of various forms were picked for exhibition. The sword-guards or tsuba exhibited are arranged as far as possible in chronological order. The development of decorative design as applied to them may be traced from the sixteenth-century iron specimens, which are either plain or ornamented with open work, chiselling, or brass inlay, down to the eighteenth or nineteenth century, when they were often made of alloys and adorned with precious metals in relief. The specimens, which illustrate the work of almost all the important artists of sword mounts, are grouped according to schools and provinces. The remainder of the collection of sword mounts is classified and deposited in a cabinet in Room 51 (third floor), where it is available for students.

In Hall 1 located in the center of the ground floor, a new plan has been formulated in order to bring together the popular pastimes and theatrical performances as practised in Oriental countries. The object of these exhibits is to illustrate, as far as it is possible with the material at present in the Museum's possession, the development of dramatic art in the Orient. The exhibits are grouped in geographical order as follows: stage scene from the greatest religious drama of the Chinese (Case 1, continued in Cases 2-4); the dance of the lions, China (Case 5); actors' masks from a play formerly given in honor of an emperor's birthday, and representing the principal gods and goddesses of the Taoist religion, China (Cases 6-7); the shadow-play, China (Cases 8-9); masks used in mystery-plays of the Lamas, and costumed figures with masks, Tibet (Cases 10-17); puppet play, Java (Cases 18-19); orchestral instruments accompanying performances, Java (Cases 20-21); actors' masks, head-dresses and costumes, Java (Cases 22-25); Singhalese masks used by actors in pantomimes and comedies, and others used by sorcerers in the healing of disease (Cases 26-28). Of these 28 cases 16 were newly installed and labeled during the year. The Chinese stage scene was shown in the old building in a condensed manner in a case 13 x 7 feet. This case has been doubled in size, making it possible to display the figures and paraphernalia in exactly the same manner as shown on the Chinese stage. The blocks of two Mastaba tombs from Egypt were unpacked and laid out in order in the south hall of the ground floor. All of them were found in a

surprisingly good condition and will require no treatment. Preparations are well under way to erect the tombs at the earliest opportunity.

Four old cases have been remodeled and renovated, nine screens were built, and storage racks for the modeler's quarters and Room 35 (physical anthropology) were erected. In Room 66 the Chinese paintings were systematically arranged in the cabinet specially built for their accommodation last year. The Indian baskets presented by Mr. Homer E. Sargent were tribally grouped and stored in the same room. Indian house models were stored in Room 36. The material shipped by Dr. Mason from Colombia was checked and stored in racks in Room 40, valuables being deposited in the office safe. Storage cases in the clerestories of the fourth floor were re-arranged. In the modeling section of the Department three Japanese women's heads, hands, and feet were completed and utilized for the exhibition of Japanese costumes. The small working model of a New Guinea village group was completed in July, and the foundation was built for the actual model to be made on the scale of 8'x8'. Fifty injured specimens required for exhibition were restored, and forty dummies were made for the exhibition of Plains Indians' costumes. Moulds and other accessories were arranged in the newly built storage racks. Material in 116 exhibition and storage cases was poisoned during the year.

BOTANY. The Section of Plant Reproductions (Stanley Field Laboratories), completed and placed on exhibition during the past year the following plant studies: A complete natural size Pineapple Plant in full leaf and flower; a life size plant of the Water Hyacinth in flower; a number of flowers of the Four o' Clock arranged to illustrate Mendelian inheritance; and a branch of *Agathis* in fruit and one of *Hymenaea* were added to the amber-like resin case in Stanley Field Hall. Work was begun, and in some cases is near completion, on the following life size plant reproductions: The "Cajou" (*Anacardium occidentale*), a branch in full leaf and fruit; *Dillenia*, a leafing, flowering and fruiting branch; *Clusia*, a fruiting and flowering leafy branch; edible Passion flower fruits; *Borassus* Palm, a fruiting spadix; "*Cicada*", a cucumber-like gourd similar in taste to a cantaloupe, and which has a delightful fragrance; a complete plant of the Florida "Coontie", *Zamia floridana*; an enlarged flower of the "Neem" or "Margosa" tree, *Melia Azadiracha*; a whole plant of the Mistletoe in flower, leaf and fruit; flowers of the Chocolate plant; and a number of enlarged fibers of various economic fiber plants such as cotton, hemp, flax, ramie, jute and others.





IRON METEORITE FROM NAVAJO, ARIZONA.  
WEIGHT, 3,006 POUNDS.

Four blocks of new steel cases have been added to the equipment of the Herbarium, which provide 768 additional pigeonholes for the accommodation of the collections.

GEOLOGY. In the Department of Geology, the Navajo meteorite acquired during the year was installed in a floor case in Hall 34. Space for the installation was obtained by consolidating in one case specimens of the Canyon Diablo meteorites, which had previously occupied two cases. The installation of the entire meteorite collection was also improved during the year by mounting all the specimens on individual blocks.

Reconstruction and mounting of the skeleton of Columbian mammoth presented by Mr. George Manierre in 1914 was completed early in the year, and the mount placed on exhibition in Hall 38. The work of reconstruction, in addition to that mentioned in the report of last year, included modelling and coloring of some leg bones, ribs and foot bones. A new steel framework for supporting the skeleton was also constructed, this work being done in the Museum laboratories. In this construction a very satisfactory combination of lightness and strength was obtained. A new base was also prepared, this being of standard Museum pattern, but with an inset of plaster, modelled and colored to represent ground. The skeleton is posed in the attitude assumed by the animal in walking.

A specimen of the head of a Devonian fish, *Macropetalichthys*, which had been dissected for examination by Dr. Erik Stensio of the University of Upsala, during a stay of ten days at the Museum, was reinstalled in such a manner as to make the dissected parts visible. In preparing this specimen for exhibition all the bony parts were given a thin stain of water-color of a brown tint which was characteristic of the bone of the specimen. The delicate veins and arteries were then picked out in a slightly lighter, and the nervous system in a slightly darker color. The matrix was given a gray stain similar to that of the original matrix. These stains, being approximately the color of the underlying material, do not materially affect the appearance of the specimen, beyond making its minute features more evident. The separate pieces used for study of the specimen were then assembled into a fewer number of larger ones, for which a special type of support was prepared. This was done by covering the backs of the assembled specimens with a sheet of tin-foil. Over this foil a plaster support was cast, and after it had hardened this was removed and the tin-foil discarded. The plaster was then trimmed, shellacked and colored. The specimen, thus mounted, makes a good exhibit, and yet

may be readily dissembled for close study. The results of Dr. Stensio's study of the specimen, the publication of which is expected shortly, promise to furnish an important contribution to paleontology, since the specimen afforded for the first time an opportunity to obtain an exact and detailed knowledge of the shape of the brain and details of the nervous and circulatory system of the head of a vertebrate animal of this very early period. The preservation of these soft parts was so perfect that they could be studied almost as well as if it were a fresh specimen.

Owing to modern advances in petroleum refining and developments in the products obtained, the larger part of the collection in Hall 36, which illustrates petroleum products and their uses has been reorganized. This reorganization involved not only withdrawing obsolete and substituting it by modern material, but also making a new arrangement and classification. The new material, as well as glass containers and a large exhibition case, was presented by the Standard Oil Company (Indiana). The new case is six feet square and eight feet high and is glazed on all sides. Its interior is fitted with glass shelves mounted upon glass pedestals. It has been placed in the center aisle in the east part of the hall. In it are shown lubricating oils and similar allied products of petroleum, the heavier and darker groups being placed in the lower part of the case and the lighter and lighter-colored groups above. This arrangement helps to bring out the full effect of the colors. From an adjoining case, part of the lubricating oils have been removed and a series of lubricating greases put in their place. Important additions have also been made to the collection of petroleum jellies or vaselines. A collection, which had for many years been on exhibition illustrating successive stages in the manufacture of finished oils according to the methods employed in utilizing Pennsylvania petroleums in 1892, has been completely discarded as obsolete and a new collection showing successive stages according to modern practice as employed by the Standard Oil Company (Indiana) has been substituted.

On account of the widespread interest evinced at the present time in oil-shales, a collection of specimens of these from several sources was assembled and placed on exhibition in Hall 35. The collection occupies one half of a floor case. The nucleus of the collection is a series presented last year by exhibitors at the American Mining Congress and by the U. S. Bureau of Mines. With these, specimens presented by Mr. J. A. Ede and others, and specimens formerly exhibited under other groupings have been incorporated. Exhibits illustrating the use of coal-tar pitch as a binder have been added to the coal by-products

collection, where they demonstrate a group of uses for this material not before shown. The peat collections have been enlarged by the addition of a series of the peats of Minnesota.

A collection illustrating various products and uses of gypsum, presented by the United States Gypsum Company, has been installed in a floor case and part of a wall case in Skiff Hall. Several specimens of crude gypsum, representing important sources of supply not hitherto shown, have been added to the exhibited series. In order to provide room for these combined exhibits, the floor cases containing asbestos, which had previously occupied two alcoves, were assembled in one, and the floor case containing gypsum placed in the empty alcove. A collection of gypsum products acquired earlier was also exchanged with one exhibiting lime in order to assemble the gypsum exhibits in one alcove.

The model of the Natural Bridge of Virginia has been provided with models to scale of an automobile and eighteen human figures. With these figures present for comparison, the great size of the bridge becomes more apparent. Seven models of human figures, one and one-half inches high, have also been made and placed in the models of the iron-smelting furnaces. These figures, to insure durability, were made of metal. Some of them were cast in Babbitt metal, but those last made have been carved directly from lead, this having been found to give a quicker and easier means of obtaining the desired result.

Some progress has been made in the construction of a model of a plant for the manufacture of Portland cement. It is proposed to exhibit this model in connection with the collection of these cements in Hall 36. This model is designed to illustrate all stages of the production of cement from the mining of the raw materials to the final finished product. After some investigation and inquiry, the plant of the Marquette Cement Company at Oglesby, Illinois, seemed to be the best adapted for the purpose, and, with the hearty consent and active co-operation of the officials of the company, the modelling of this plant was undertaken. The scale of the model now under construction is twelve and one-half feet to the inch. When completed it will be ten feet long and four feet wide. Details of mining the limestone and clay for the cement will be shown, the methods of transportation, and also the crushers, kilns and other machinery of the mills. Some of the larger elements of the machinery will be shown in section as well as entire, so that all stages of the process may be clearly portrayed. The model is being made in two sections, to be joined later. The first of these sections is now nearly completed.

Two attractive and substantial map filing cases have been made from plans prepared in the Department, which ensure the preservation of the maps and render them readily available for reference. The cases contain drawers of two sizes, one suitable for the topographic maps and atlases of the U. S. Geological Survey, and the others for larger maps. The cases contain 70 drawers. In them there have been carefully filed, grouped alphabetically by states and alphabetically under each state, 2,856 maps of the U. S. Geological Survey. The atlases of the same Survey, numbering 213, have also been placed in the drawers in numerical order, and 27 large miscellaneous maps have been given adequate space.

Some additions have been made to the equipment of the chemical laboratory, which will considerably facilitate work there, though much needs yet to be provided. Two permanent laboratory desks with stone tops and piped for gas, water and air were constructed, as well as a portion of a hood. A similar desk and part of a hood have been provided for the Curator's laboratory. Some new apparatus, including a Parr calorimeter, with all accessories, Stokes still, drying oven of U. S. Bureau of Standards type, hand rock-crusher and bucking-board, has been obtained. During the year several calorimetric determinations of the heating value of the fuels used by the Museum have been made, as well as various analyses of substances used in the Museum or belonging to the collections. The patina of a number of Japanese sword guards belonging to the Japanese collection has been restored. To the equipment of the paleontological laboratory a drill-press and engine lathe, each with individual motors, have been added, and the forge was connected with a flue, making it available for operation. Use of this equipment made it possible to construct in the laboratory the steel framework on which the skeleton of the Mammoth was mounted, and to manufacture many tools and other articles needed for field-work. Text for two guide leaflets, one on the model of the Arizona gold mine and one on the models of the blast furnaces for the smelting of iron, were prepared by Associate Curator Nichols and published during the year.

ZOOLOGY. The exhibition work in the Department of Zoology consisted mainly of the reinstallation of some of the cases, the preparation of specimens for groups, and the mounting of those species needed to fill gaps in the serial exhibit. In Hall 22, four cases containing the higher Primates were re-installed. The paired specimens were removed from their unsightly bases, thoroughly cleaned and otherwise improved.



BOTANICAL SPECIMENS COLLECTED BY THE STANLEY FIELD BRITISH GUIANA EXPEDITION.  
A PORTION OF THE MATERIAL IN PROCESS OF CURING.



Instead of installing each pair of animals on a separate base, they were placed on a new ground-work base that covered the entire bottom of the case. This change added much to the attractiveness of the exhibit of these interesting animals. For the contemplated group of American elk, the taxidermist modeled four animals and made plaster casts of them. The serial exhibit, it was believed, could be made more interesting by showing a complete series of some of the well known North American mammals. For this reason work was started on two cases, the one to contain a specimen of each of the large American cats; the other to show the bears of North America. For the case of cats, a jaguar and a mountain lion were modeled and cast, and the work on one specimen for the bear case has been advanced to a similar degree.

Eight cases of the fish exhibit have been greatly improved by repainting the black screens with a light neutral tint, similar to that used on the screens in the bird cases. The specimens were rearranged and augmented, with the result that the exhibit has been made much more attractive. Since black labels are not very satisfactory on light backgrounds, as an experiment, one case has been installed with labels more in harmony with the color of the screen. The taxidermist assigned to the Division of Fishes completed the mounting of the thirty-five specimens, work on which was started last year. In addition, he has eighty or more specimens under way. These, on being completed, will be installed when there are enough in hand to fill a screen. He has also prepared a series of specimens showing the different stages of the art of mounting fishes by his greatly improved method. The taxidermist engaged in reproducing reptiles and amphibians by means of his celluloid process has secured remarkable results, several of his most recent reproductions being wonderfully life-like. The species that he has now reproduced in celluloid include, among the amphibians, two green tree frogs, a pickerel frog, four leopard frogs showing variation of color pattern, one toad, a mud puppy, a hell-bender and two western newts. Among the reptiles are a six-lined lizard, a turtle and eight snakes, of which the most notable are a pilot snake and a fourteen foot anaconda. A case containing the two habitat groups of insects, that were mentioned in the report for last year, was completed and placed on exhibition at the beginning of the year. Considerable progress has been made in condensing the shell collection. By eliminating duplicates, four cases have been reinstalled with a representative series of families that formerly filled over eight cases.

As a preliminary step toward forming the long delayed exhibit of

butterflies, a series of North American species have been selected and many of them remounted and relabeled. Whenever an empty case becomes available by condensing the shell exhibit, it will be utilized for the exhibition of butterflies or other insects. During the latter part of the year, there was installed in Hall 19 a panel exhibit, showing the well known periodical or seventeen-year cicada in its various stages. This insect was exceedingly abundant in northern Illinois during the early part of the summer and will not appear again for another seventeen years. A Leaflet on the same insect has also been prepared, and only awaits the completion of the drawings for a plate before it is submitted for publication.

For the rearrangement of the exhibits, the Curator formulated plans and made diagrams showing tentative provisions for the growth and development of each division. In collaboration with Mr. Boardman Conover, he prepared a paper entitled "Game Birds from Northwestern Venezuela." This was issued by the Museum as Publication 210 of the Zoological Series. He also wrote a Leaflet on the "White-tailed Deer." As chairman of the local committee of the American Ornithologists' Union, which held its annual meeting in the Museum, he endeavored to make the meeting as successful as possible. During the absence in the field of the Assistant Curator of Birds, noteworthy progress in arranging the reference collection of birds and in labeling specimens was made. The Assistant in the Division of Birds prepared a Leaflet on the "Chicago Winter Birds."

On assuming his duties in the Museum, Dr. C. E. Hellmayr, the Associate Curator of Birds, examined the entire collection, rearranged many of the families, and in many ways rendered the specimens more accessible and hence more useful. Besides naming several lots sent for determination by other museums, he has identified over 1,200 bird skins. He has, likewise, given considerable attention to desiderata for the Edward E. Ayer Ornithological Library. The reference collection of fishes was given some needed attention, but there still remain several large collections and some smaller groups that have not yet been distributed. Specimens which could be so treated were placed on the shelves arranged in families and a finding list prepared for them. About one-third of the material so arranged has been relabeled and catalogued in an alphabetic index of genera and species. Shelf labels in large type, giving the name and number of the family or families represented on each shelf, were printed and installed.

The work of accessioning and cataloguing the specimens in the Division of Reptiles and Amphibians was given first consideration. The



AMERICAN BISON. BUFFALO.  
GIFT OF MR. ARTHUR B. JONES.

UNIVERSITY OF ILLINOIS LIBRARY



Assistant Curator also prepared a Leaflet on "The American Alligator," identified a collection of lizards from the Fiji Islands, and gave attention to the preparations for an expedition to British Honduras and Honduras early in 1923. Besides cleaning skulls and skeletons of both mammals and fishes, the Assistant Curator of Osteology dismounted and placed in the reference collection a number of skeletons. The sea elephant has been entirely remounted, and the fingers and toes have been wired so as to preclude the possibility of their being broken, if handled.

#### THE N. W. HARRIS PUBLIC SCHOOL EXTENSION OF FIELD MUSEUM OF NATURAL HISTORY

At the end of the year 1922, this Department had 752 cases available for distribution among the schools of Chicago. A scheme, by which three cases were loaned at regular intervals to each of 323 schools for a period of sixteen school-days, was systematically maintained during the year. The adoption of a new method, by which the delivery and collection of the cases are made at or near the principal's office, has greatly facilitated operations, which must be made during school hours in order that proper receipts may be obtained. In addition to scheduled loans, many others were made at the requests of principals and teachers. As the demand was almost wholly for cases containing industrial and commercial exhibits, it was considered advisable to prepare a larger number than usual of cases of this character. This has been made possible by the temporary employment of a former preparator of this department. The subject of one of the cases is "Useful things obtained from Coal," and sixteen of the best known were selected from among its numerous products. In addition to the usual general and specimen labels, the case is provided with an attractive and unique diagram illustrating the products.

Permission was obtained, in response to applications, to loan cases to schools other than public schools. These were the Francis W. Parker and the North Central High Schools, the latter being in charge of the Sisters of Charity. A similar request from the Concordia Evangelical Lutheran School was received too late for inclusion in the schedule of deliveries. A special loan of several cases was made to the main Chicago Public Library, and subsequently a request was made and granted, that the Library be placed on the schedule with the schools. At the annual convention of the National Education Association held in Chicago, February 27th to March 4th, several cases were,

by request, placed on exhibition to illustrate the aspect of visual instruction as presented by the Harris Extension, and lantern slides of other cases of the Extension were used in lectures. The Mid-winter Institute for Teachers of MacLean County, Illinois, through Professor F. Dean McClusky, Instructor of Education at the University of Illinois, requested the loan of a number of cases for exhibition and discussion during the three days' meeting of the Institute at Bloomington, the eight cases sent being much appreciated.

At the request of the Administrative Secretary of the U. S. National Museum at Washington, D. C., a case was sent there for use in a lecture given by Dr. Paul Bartsch, Curator, Division of Marine Invertebrates, of that Institution. In a letter Dr. Bartsch said: "Your loan groups are windows, a view through which should create the desire to pass through the door into the larger field." Ten cases were placed on exhibition at the south end of George M. Pullman Hall during the annual meeting of the American Ornithologists' Union. Cases were loaned to the Zoological Museum of the University of Minnesota and the Public Museum of Milwaukee as samples in making cases for a similar purpose.

GUIDE-LECTURER. A Guide-Lecturer was appointed on February the 15th for the purpose of conducting school children, clubs, societies and other visitors through the Museum Halls, and giving information and lectures on the various exhibits. The scheme proved successful and it was decided to develop especially the elementary educational section. After consultation with Mr. Peter A. Mortensen, Superintendent of Chicago Public Schools, and Mr. Dudley Grant Hayes, Director of Visual Education, a programme was arranged by which lectures at the Museum were made to correlate with class-room work in all the grades. During the six months in which the schools were in session, lectures were given to 139 classes attended by a total of 4,927 children. The number of clubs and conventions that visited the Museum during the year was not large, but is increasing as wider publicity is given to the lectures. In all, 43 clubs and conventions, numbering 1,682 persons, availed themselves of the service. To meet the requirements of casual visitors, a programme of eight weekly tours was announced late in July, which were well attended during the tourist season. The number of tours conducted was 67, representing an attendance of 527. Members of the scientific staff cooperated actively to make this section a success. The total number of lectures given during the year was 249, and the attendance amounted to approximately 10,000.

## GENERAL

PRINTING. As all publications, leaflets, and other matter are now printed in the Museum, the work of this section has considerably increased. 5,540 publications, 30,173 leaflets, and 11,910 special issues were printed and bound during the year. The number of labels and other impressions printed was as follows:

	Exhibition Labels	Other Impressions
Anthropology .....	6,047	2,000
Botany .....	133	52,642
Geology .....	711	2,900
Zoology .....	636	25,777
Harris Extension..	326	500
General .....	312	19,549
Total .....	8,165	103,368

PHOTOGRAPHY. The following is a tabulation of the work done in this section:

	Number of Lantern Slides Made	Number of Post Cards Made	Number of Negatives Made	Number of Enlargements Made	Number of Negatives Developed	Number of Prints Field Exp.	Number of Prints Made
General .....	163	3,352	287	30	...	...	746
Anthropology .....	...	....	515	27	...	...	1,810
Botany .....	...	....	109	..	...	...	2,653
Geology .....	...	....	51	..	340	...	1,328
Zoology .....	23	....	144	..	86	...	143
Harris Extension..	...	....	78	..	...	...	175
Sale .....	35	....	...	..	...	...	48
Gift .....	10	....	...	..	...	...	125
Totals .....	231	3,352	1,184	57	426	...	7,028

PHOTOGRAVURE. The number of photogravures printed during the year for various purposes is given below:

Publications .....	56,000
Leaflets .....	96,000
Postal Cards.....	20,000
Total .....	172,000

Herewith are also submitted financial statements, lists of accessions, names of members, etc., etc.

D. C. DAVIES, Director.

## ATTENDANCE STATISTICS

FROM JANUARY 1, 1922 TO DECEMBER 31, 1922

Total Attendance .....	386,299
Paid Attendance .....	74,339
Free Admission on Pay Days:	
School Children .....	21,537
Students .....	8,745
Teachers .....	1,058
Members—Corporate .....	25
Life .....	62
Annual .....	33
Officers' Families .....	20
Press .....	46
Special .....	447
Admissions on Free Days:	
Thursdays .....	54,158
Saturdays .....	60,507
Sundays .....	165,322
 Highest Attendance on any day (June 25, 1922) .....	
Highest Paid Attendance (September 4, 1922) .....	5,169
Lowest Attendance on any day (December 18, 1922) .....	42
Average Daily Admissions .....	2,140
Average Paid Admissions .....	1,058
Guides sold .....	359
Articles checked .....	18,526
Picture Postal Cards sold .....	13,854
	202,708

## GENERAL FUND

STATEMENT OF CASH RECEIPTS AND DISBURSEMENTS  
For the Year Ending December 31, 1922

Balance December 31, 1921..... \$16,237.20

	RECEIPTS	
Income .....	\$187,165.04	
South Park Commissioners.....	100,500.00	
Admissions and Check Room.....	18,926.78	
Annual Members—Dues.....	520.00	
Sundry Receipts.....	11,896.82	
Sale of Securities.....	28,970.00	
Loans Repaid.....	4,519.33	
Contributions .....	62,962.76	\$415,468.73
		\$431,697.93

## DISBURSEMENTS

Departmental Expenses.....	\$ 37,781.37	
Expeditions .....	34,182.97	
General Operating Expenses.....	249,214.33	
Collections .....	25,058.18	
Furniture and Fixtures.....	39,919.98	
Securities Purchased.....	31,920.00	
Miscellaneous .....	2,808.54	
	\$420,885.37	
Transferred to Sinking Funds.....	9,000.00	\$429,885.37
Cash Balance Dec. 31, 1922.....		\$ 1,812.56

THE N. W. HARRIS PUBLIC SCHOOL EXTENSION  
Statement of Income and Expenses for the Year 1922

## INCOME

Interest and Dividends on Investments.....	\$ 15,312.50	
Less Collection Charges.....	481.38	
	\$ 14,831.12	
Interest on Bank Balances.....	44.65	\$ 14,875.77
Expense of Distribution of Cases to Public Schools	\$ 2,721.13	

## EXPENSES

General Expense.....	225.62	
Salaries .....	8,058.57	\$ 11,005.32
		3,870.45
Deduction from Income (Depreciation of Automobile Delivery Car) .....		602.24
Net Income for Year.....		\$ 3,268.21
Less: Amount transferred to Reserve Fund February 2, 1922 .....		1,325.00
Balance transferred to Surplus.....		\$ 1,943.21

## ACCESSIONS

## DEPARTMENT OF ANTHROPOLOGY

ART INSTITUTE of Chicago.

- 1 bronze bust of Sitting Bull, by Edward Kemeys, with pedestal (gift).

AYER, EDWARD E., Chicago.

- 1 woman's breast ornament of silver and plated silver, inlaid with plain and engraved stones —Dalmatia (gift).

BAKER, PROFESSOR ARCHIBALD GILLIS, Chicago.

- 1 large rug of white alpaca fur —La Paz, Bolivia (gift).

BANKS, COL. CHAS. E., Chicago.

- 109 prehistoric stone arrowheads —Island of Martha's Vineyard, Massachusetts (gift).

BENJAMIN, C. H., West Lafayette, Indiana.

- 1 birch-bark canoe — Chippewa, Ontario, Canada (gift).

CHALMERS, WILLIAM J., Chicago.

- 1 pottery figurine of woman — Tarascan Culture, Michoacan, Mexico (gift).

CROSBY, F. K., Chicago.

- 4 tobacco-pipes, 2 war clubs, 1 bow, 1 bow-case, 1 quiver, 8 arrows, 1 saddle, 1 kris and 1 knife — Hunkpapa Teton Sioux, Standing Rock Agency, North Dakota; Moro, Philippine Islands (gift).

DODMAN, ALFRED C., JR., New York City.

- 1 pre-Columbian gold image — Central America (gift).

DRAKE, MRS. TRACY, Chicago.

- 1 feast bowl carved from a burl — Hawaii (gift).

FALVEY, Harved P., Chicago.

- 1 breast ornament carved from banded slate — Port Chesler, Indiana (gift).

FIELD, MRS. MARSHALL, SR., Washington, D. C.

- 2 lacquered and painted screens, each of twelve wooden panels — China (deposit).

FIELD MUSEUM OF NATURAL HISTORY.

Collected by J. Alden Mason.—Capt. Marshall Field Colombian Expedition:

- 1527 specimens of carnelian and agate beads, bracelets, anklets, and necklaces, stone implements, pottery and gold ornaments — Arhuaco, Colombia, South America.

## Purchases:

- 1 gold image of a Hindu deity, probably of Javanese workmanship — Mindanao, Philippine Islands.

- 58 specimens ethnographical material, chiefly clothing, weapons, armor, musical instruments and household utensils — Lolo, Sechuan, China, from Dr. Camillo Schneider, Charlottenburg.

- 1 bronze bust of Dr. Gunsaulus, from John G. Prasuhn, Chicago.

- 37 specimens of baskets, arrows, belts, moccasins, pipes, and miscellaneous objects — Eskimo, Sioux, Pomo and Mari-copa, Alaska, and United States — from Mrs. Fred Schwatka, Rock Island, Illinois.

- 1 woollen coat, 1 woman's dress, embroidered (5 pieces) Quiche tribe, Guatemala, from E. W. Allstrom, New York City.

FIELD MUSEUM OF NATURAL HISTORY.

REPORTS, PLATE XXVI.



HEAD OF BODHISATVA, INDIA. GANDHARA PERIOD (SECOND CENTURY A.D.)  
GIFT OF WILLIAM WRIGLEY, JR.

• 1991 • 1992

• 1993 • 1994

- 45 specimens of buckskin, bead-work, basketry, and ceremonial objects—Apache, Cherokee, Cheyenne, Hopi, Kiowa, Navajo, Paiute, Wichita, Arizona, Oklahoma and Southwest United States, from Mother Mary Agnes, Chicago.
- FRIEDMAN, OSKAR J., Chicago.  
1 carved wood Chinese screen of fifteen panels—China (gift).
- GUNSAULUS, MISS HELEN C., Chicago.  
1 carved wood miniature Buddhist shrine, for household worship—Japan (gift).  
1 woman's belt of strung seeds—Hawaii (gift).
- JONES, ARTHUR B., Chicago.  
29 ancient stone sculptures of Gandhara and later periods, 1 Jaina cast brass image, 1 Tibetan ceremonial bone apron—India and Tibet (gift).
- LAGERQUIST, DR. A. W., China Inland Mission, Shanghai, China.  
1 silver enameled wedding ring—Laohokow, Hupeh, China (gift).
- LOGAN MUSEUM, BELOIT COLLEGE, Beloit, Wisconsin.  
53 fragments of prehistoric pottery from shell mounds—Bay of Tokyo, Japan (exchange).
- McKINNEY, WILLIAM A YER, Chicago.  
1 suit of hide armor with helmet and sword—Lolo, Sechuan, China (gift).
- MOESSNER, DR. FREDERICK, Chicago.  
63 specimens of arrowheads, hammers, and other prehistoric stone implements; also some historical relics (fragments of pottery, glass, and iron)—Madison, Wisconsin (gift).
- MORGAN, F. W., Chicago.  
1 birchbark canoe—Chippewa, Ontario, Canada (gift).
- MUSEU NACIONAL DE RIO DE JANEIRO, Brazil.  
33 specimens of bows, arrows, bas-
- kets, bead necklaces, stone axe, fiber aprons, bone bracelets—Nambiquara, Brazil (exchange).
- NEWMAN, HENRY J., Chicago.  
2 grooved stone axes—Mound Region near Cat Fish Creek, Dubuque, Iowa (gift).
- NITTA, The MISSES YOKAYAMA KAWAMOTO, Evanston, Illinois.  
3 pairs women's socks (tabi)—Japan (gift).
- NOZAKI, MRS., Chicago.  
3 silk cords for tying sash of woman's dress—Japan (gift).
- PATTEN, HENRY J., Chicago.  
1 pair of lacquered Daimyo bows on stand, with quiver containing 10 arrows—Japan (gift).
- PUBLIC MUSEUM OF MILWAUKEE, Milwaukee, Wisconsin.  
56 specimens of woven bags, birchbark vessels, baskets, mats, canoe paddle, etc.—Chippewa, United States (exchange).
- RYERSON, MARTIN A., Chicago.  
1 figure of mastiff of green-glazed Han pottery—China (gift).
- SCOTT, ALEXANDER, Philadelphia, Pennsylvania.  
1 marble pedestal with high-relief carving of triad, Gupta period—India (gift).
- SHASTA SPRINGS HOTEL, Shasta Springs, California.  
1 mortar carved from lava—California (gift).
- WICKER, MISS CAROLINE, Chicago.  
1 painting representing scenes from life of Buddha, 1 Buddhistic clay votive tablet, 1 Pali palm-leaf manuscript, flint and steel pouch with brass ornaments—Tibet, China, Burma (gift).  
1 tiger knife, 1 badge in shape of Garuda, 1 pair of slippers embroidered with beads, 2 fragments of glazed pottery, 1 album, 1 snake stick—Annam, Borneo, China, India, Japan, Siam (gift).

- 1 silver hat, 1 ivory seal, 1 brass bell, 1 cigar case, 1 lime box, 3 textiles—Annain, Japan, Java, Philippines, Siam (gift).
- WILEY, MRS. WILLARD, R., Chicago.  
1 pair beaded buckskin saddle-bags—Sioux, United States (gift).
- WOOD, JUNIUS, Chicago.  
1 large fighting-sword in black-lacquered sheath and silk bag, 1 iron sword-guard with de-
- signs inlaid in silver, 1 fishhook of mother-o'-pearl—Japan and Marshall Islands (gift).
- WRIGLEY, WILLIAM, JR., Chicago.  
6 Buddhist stone sculptures of the Gandhara period—India (gift).
- ZULFER, P. M., Chicago.  
2 woollen blankets with colored designs—Teotitlean, State of Oaxaca, Mexico (gift).

### DEPARTMENT OF BOTANY

- ARTHUR, DR. J. C., Lafayette, Indiana.  
1 herbarium specimen (gift).
- BARTHOLOMEW, ELAM, Stockton, Kansas.  
9 herbarium specimens (gift).
- BUCHTIEN, OTTO, La Paz, Bolivia.  
25 herbarium specimens (gift).
- CHALMERS, WILLIAM J., Chicago.  
26 photographs of herbarium specimens (gift).
- CLOKEY, I. W., Denver, Colorado.  
214 herbarium specimens (exchange).
- CRUMP, DR. J. E., Winter Haven, Florida.  
1 economic specimen (gift).
- DAVIDSON, DR. A., Los Angeles, California.  
1 herbarium specimen (gift).
- FIELD MUSEUM OF NATURAL HISTORY.**  
Collected by B. E. Dahlgren (Stanley Field Guiana Expedition):  
375 economic and exhibition specimens.  
240 herbarium specimens.  
52 plants, branches in formalin and material for reproduction.  
235 plaster moulds.  
40 plaster casts.  
975 negatives.  
Collected by J. F. Macbride (Capt. Marshall Field Peruvian Expedition):  
121 economic and exhibition specimens.  
2463 dried plants.  
6000 duplicates for exchange.
- Collected by C. F. Millspaugh:  
30 specimens (expedition).  
469 specimens (collated).
- Purchased:  
36,429 herbarium specimens (Capt. Marshall Field 1922 Fund).  
17 economic specimens.  
A number of other purchases have not yet been organized.
- FULLER, G. D., University of Chicago.  
59 herbarium specimens (gift).
- GRANT, J. M., Langley, Washington.  
145 herbarium specimens (exchange).
- GRAY HERBARIUM, Cambridge Massachusetts.  
346 herbarium specimens (exchange).
- HAZLET, A. E., Sydney, Australia.  
26 photographs of plants (gift).
- HERBIER MUSEUM L'HISTOIRE NATURELLE, Paris, France.  
3205 herbarium specimens (exchange).
- INTERNATIONAL HARVESTER COMPANY, Chicago.  
11 economic specimens (gift).
- KING, MISS ANNA, Chicago.  
83 herbarium specimens (gift).
- KNOPF, EZRA C., Avalon, Santa Catalina, California.  
4 herbarium specimens (gift).
- LLOYD, R. N., Chicago.  
368 herbarium specimens (gift).
- McCREA, R. M., Chicago.  
1 economic specimen (gift).

- MILLSPAUGH, C. F., Chicago.  
25 specimens (gift).
- NEW YORK BOTANICAL GARDEN, New York City.  
3 herbarium specimens (gift).  
198 herbarium specimens (exchange).
- PAYSON, E. B., Laramie, Wyoming.  
1 herbarium specimen (gift).
- PEATTIE, DONALD CULROSS, Cambridge, Massachusetts.  
264 herbarium specimens (gift).
- PIPER, C. V., Washington, D. C.  
1 herbarium specimen (gift).
- ROSE, DR. J. N., Washington, D. C.  
12 herbarium specimens (gift).
- R. M. McCREA ESTATE, Lake Geneva, Wisconsin.  
1 economic specimen (gift).
- SHERFF, EARL E., Chicago.  
8 herbarium specimens (gift).
- STRAUCH, F. E., Riverdale, Illinois.  
24 economic specimens (gift).
- TONDUZ, A., Guatemala.  
14 herbarium specimens (gift).
- TUTTLE, R. H., San Bernardino, California.  
1 economic specimen (gift).
- UNIVERSITY OF CALIFORNIA, Berkeley, California.  
1 herbarium specimen (exchange).
- U. S. DEPARTMENT OF AGRICULTURE, Washington, D. C.  
1 herbarium specimen (gift).
- U. S. NATIONAL HERBARIUM, Washington, D. C.  
1951 herbarium specimens (exchange).

### DEPARTMENT OF GEOLOGY

- AYER, EDWARD E., Chicago.  
9 photographs illustrating making of a model of Yellowstone Park (gift).
- BEDFORD, GEORGE, Morris, Illinois.  
381 specimens fossil plants—Mazon Creek, Illinois (gift).
- BENTON, O. M., Courtland, Ohio.  
1 specimen petroleum—West Mecca, Trumbull Co., Ohio (gift).
- CHALMERS, WILLIAM J., Chicago.  
56 models of distorted and pseudo-symmetrical crystals (gift).  
225 crystal models (gift).
- CHRISTOPHERSON, A. E., Clarence, Iowa.  
1 specimen rock weathering—Clarence, Iowa (gift).
- EDE, J. A., La Salle, Illinois.  
1 specimen oil shale—Peru, Illinois (exchange).  
1 specimen smithsonite — Los Plomos, Chihuahua, Mexico (exchange).
- FIELD MUSEUM OF NATURAL HISTORY.  
Collected by B. E. Dahlgren (Stanley Field Guyana Expedition):
- Collected by O. C. Farrington (Capt. Marshall Field Brazil Expedition):  
808 specimens gems, minerals and ores—Brazil, S. A.  
3 specimens sandstone — Navajo, Arizona.
- Collected by H. W. Nichols:  
1 specimen river sand—Chicago.  
6 specimens hard-pan—Chicago.  
8 specimens brachiopods—Oglesby, Illinois.  
20 specimens gypsum — Oglesby, Illinois.  
24 specimens concretions, septaria, shales and limestones—La Salle, Illinois.
- Purchase:  
4 specimens minerals — Lanzada, Italy.  
1 iron meteorite—Dungannon, Virginia.  
1 iron meteorite — Navajo, Arizona.  
1 fossil skull.
- FLEISCHLE, J. H., Springfield, Illinois.  
1 specimen sericite—Arizona (gift).

- GALLAGHER, J. F., Chicago.  
1 specimen wattlevillite — Texas,  
(gift).
- GILMORE, Dr. W. S., Owensboro,  
Kentucky.  
21 specimens limonite geodes—  
Green River, Kentucky (gift).
- HILL, MARCUS STOW, Chicago.  
1 specimen peat—Prov. of Novgo-  
rod, Russia (gift).
- HOLMES, THOMAS J., Chicago.  
14 specimens peat with fossil  
shells—Bremen, Illinois (gift).
- ILLINOIS CLAY PRODUCTS COM-  
PANY, Oglesby, Illinois.  
4 specimens fire clay—LaSalle Co.,  
Illinois (gift).
- JEWELL, F. M., Carlinville, Illinois.  
8 specimens fossils—Fort Benton  
Beds, Kansas (gift).
- KLECKNER, M. E., Tiffin, Ohio.  
1 specimen variegated sandstone—  
Leesville, Ohio (gift).
- LEAN, F. J., Calumet, Michigan.  
24 specimens silver, agates and  
thomsonite—Calumet, Michi-  
gan (gift).  
29 specimens ores and minerals—  
Lake Superior Copper Dis-  
trict, Michigan (gift).
- MARBLEHEAD LIME CO., Chicago.  
1 specimen limestone—Marblehead,  
Illinois (gift).  
10 specimens lime — Marblehead,  
Illinois (gift).
- MARQUETTE CEMENT MFG.  
COMPANY, Chicago.  
1 panoramic view of the LaSalle  
plant (gift).
- McKEEN, F. A., East Stoneham,  
Maine.  
1 specimen concretion—East  
Stoneham, Maine (gift).
- MILLAR, A. Q., Murfreesboro,  
Arkansas.  
9 specimens rocks of the diamond  
fields — Pike Co., Arkansas  
(gift).  
1 lot minerals accompanying dia-  
monds—Pike Co., Arkansas  
(gift).  
29 specimens rough and cut gar-  
nets and peridots—Pike Co.,  
Arkansas (gift).
- MOESSNER, DR. FREDERICK,  
Chicago.  
7 specimens septaria, concretions  
and stalagmite (gift).  
1 specimen tufa (gift).  
6 specimens fossils (gift).  
13 specimens minerals (gift).
- MORRISON, J. CAMPBELL, Detroit,  
Michigan.  
20 specimens peat — Michigan  
(gift).
- MOSCRIP, A. L., Chicago.  
1 specimen chalk—Scotia, Nebras-  
ka (gift).
- QUICK, ARTHUR C., Austin, Illi-  
nois.  
3 specimens slickensided sand-  
stone—Somerset Co., New Jer-  
sey (gift).
- SCHMITZ, JOSEPH A., Chicago.  
1 specimen petrified wood—  
Arizona (gift).
- STANDARD OIL COMPANY (In-  
diana), Chicago.  
5 specimens paraffine (gift).  
47 specimens paraffine candles  
(gift).  
135 specimens petroleum oils and  
greases (gift).
- THOMAS, R. K., Navajo, Arizona.  
1 specimen barite—Seven Springs,  
Colorado (gift).  
5 specimens vertebrate fossils—  
Seven Springs, Colorado  
(gift).  
40 specimens invertebrate fossils—  
Seven Springs, Colorado  
(gift).
- THURBER, H. K., Grand Junction,  
Colorado.  
5 specimens radium, uranium and  
vanadium ores—Utah and Col-  
orado (gift).
- TOLLEFSON, GEO., Chicago.  
1 specimen malachite—Kambove  
Mine, Belgian Congo, Africa  
(gift).
- UNITED STATES GYPSUM COM-  
PANY, Chicago.  
47 specimens illustrating the uses  
of gypsum (gift).
- WISCONSIN MINING SCHOOL,  
Platteville, Wisconsin.  
30 photographs showing all opera-  
tions of typical mine property  
(gift).

## DEPARTMENT OF ZOOLOGY

- ABBEY, E. S., Chicago.  
 1 roach—Chicago (gift).
- ABENDROTH, H., Chicago.  
 1 cricket—Illinois.  
 1 salamander—Wisconsin (gift).
- ADAMS, MRS. J., Wilmette, Illinois.  
 1 oriole—South America (gift).
- AKELEY, CARL E., New York City.  
 4 white-tailed deer — Michigan  
 (gift).
- ALLEE, DR. W. C., Chicago.  
 1 turtle (gift).
- ARCHIBALD, W., Milwaukee, Wisconsin.  
 1 snake—Wisconsin (gift).
- BABCOCK, FREDERICK R., Wheaton, Illinois.  
 1 wart hog skull and scalp—British East Africa (gift).
- BEST, SALLIE KEEP, Chicago.  
 2 horned toads—California (gift).
- BIVANS, K. R., La Grange, Illinois.  
 50 specimens of fishes—Michigan  
 (gift).
- BOOTH FISHERIES COMPANY,  
 Chicago.  
 1 fat bass, 4 rat fishes, 4 starry  
 flounders — Pacific Ocean  
 (gift).
- BRADLEY, HERBERT E., Chicago.  
 1 snake—Wisconsin (gift).
- BURNS AND COMPANY, F. J.,  
 Chicago.  
 13 frogs (gift).
- CHESTERFIELD, DR. A. P., Detroit,  
 Michigan.  
 2 mountain sheep—Mexico (gift).
- CLARK, B. PRESTON, Boston, Massachusetts.  
 30 hawk-moths—Various parts of  
 the world (gift).
- COALE, HENRY K., Highland Park,  
 Illinois.  
 2 Pacific fulmars—Washington.  
 3 redpoll finches—Illinois.  
 1 skunk—Illinois (gift).
- CONOVER, H. B., Chicago.  
 1 grizzly bear skull—Yukon Territory (gift).
- COUNTRYMAN, MRS. C. E., Chicago.  
 1 sponge—West Coast of Florida.  
 1 specimen of coral—Florida  
 (gift).
- CRIMMINS, COL. M. L., San Antonio, Texas.  
 5 snakes, 2 rattle-snakes, 1 lizard,  
 —Texas (gift).
- FIELD MUSEUM OF NATURAL HISTORY.  
 Collected by W. I. Charlesworth:  
 1 whip-scorpion.  
 3 centipedes—Miami, Florida.  
 Collected by Dr. B. E. Dahlgren:  
 (Stanley Field Guiana Expedition.)  
 1 crab-eating coon, 1 opossum, 1  
 monkey skull, 7 bats, 6 Caiman  
 eggs, 1 anaconda, 1 ana-  
 condia skin, 1 boa skin, 29  
 marine toads, 3 snakes, 2 liz-  
 ards, 36 frogs, 3 small soles,  
 13 mammals, 25 bats, 1 bug,  
 1 scorpion, 1 centipede, 15  
 louse-flies, 130 insects—mantis,  
 bugs, butterflies, moths,  
 bees, etc., 6 South American  
 catfishes—British Guiana.  
 Collected by W. J. Gerhard:  
 70 spiders, bugs, crickets, butter-  
 flies, beetles, flies, bees and  
 parasites—Indiana and Illinois.  
 Collected by E. Liljeblad:  
 1 beetle, 11 butterflies, 1 moth—  
 Indiana and Illinois.  
 Collected by S. F. Hildebrand and  
 S. E. Meek:  
 1784 specimens of fishes—Panama.  
 Collected by C. C. Sanborn:  
 1 roach.  
 1 beetle—Illinois.  
 Collected by Karl P. Schmidt:  
 15 frogs, 4 snakes, 2 salamanders,  
 2 snakes—Indiana.  
 Collected by L. L. Walters:  
 1 turtle, 2 lizards, 12 snakes —  
 Chicago.  
 15 bird-lice—Indiana.  
 5 birds, 7 mammals—Illinois and  
 Indiana.  
 Collected by A. C. Weed and L. L.  
 Pray:  
 7 birds, 2 toads, 7 frogs, 5 liz-  
 ards, 1 snake—Illinois.

- 1080 specimens of fishes—Mississippi River, Illinois.
- Collected by A. C. Weed and K. R. Bivans:  
275 fishes, 4 dragonfly nymphs, 7 frogs—Illinois.
- Collected by A. C. Weed and L. L. Walters:  
1 turtle, 2 garter snakes, 2 frogs—Indiana.  
2 garter snakes, 1 turtle—Illinois.  
2 lizards, 1 spreading adder—Illinois.  
14 toads, 1 tree toad, 1 garter snake, 2 lizards—Illinois.  
3 frogs, 5 American toads—Illinois.
- Collected by Weed, Walters and Scupham:  
837 fishes, 1 frog, 4 toads, 1 turtle, 5 snakes—Illinois and Indiana.
- Collected by Weed, Walters and Young:  
2 frogs, 7 turtles—Illinois.  
1 frog, 10 snakes—Illinois.
- Collected by A. C. Weed and F. S. Young:  
605 fishes—Illinois.
- Collected by Alfred C. Weed:  
1 water snake, 9 Cumberland terrapin, 12 map turtles, 1 soft shell turtle, 1 lizard—Illinois and Missouri.  
7 turtles.  
25 snakes, 12 frogs, 8 toads, 1 turtle—Illinois.
- Purchases:  
16 birds—Argentina and British East Africa.  
9 bugs, 10 ants, 206 beetles—South Cameroon, Africa.  
132 birds—Illinois and Alaska.  
1 passenger pigeon—Illinois.  
54 market fishes.  
1 Chinese alligator—Wuhu, China.  
4 green tree toads, 3 coachwhip snakes, 2 western chicken snakes—Texas.  
2 black snakes, 1 leather snake, 3 Muhlenberg's turtles, 8 green frogs—Pennsylvania.
- FRIESSER, J., Chicago.  
3 moths—Chicago (gift).
- GEILHUFÉ, F. H., Chicago.  
9 fishes—Chicago (gift).
- GERHARD, W. J., Chicago.  
1 snake—Illinois.  
2 snakes—Indiana.  
184 millipedes, dragonflies, caddiceflies, bugs, butterflies, moths, flies, beetles, bees, wasps and parasites—Illinois and Indiana (gift).
- GRAHAM, WILLIAM A., Chicago.  
1 mallard duck—Illinois (gift).
- GRONEMANN, C. F., Chicago.  
2 beetles—Illinois (gift).
- GUERET, E. N., Chicago.  
1 gray-cheeked thrush skeleton—Chicago (gift).
- HEEREY, WILLIAM, Chicago.  
1 young alligator—Florida (gift).
- HELLMAYR, DR. C. E., Chicago.  
4 moths.  
60 butterflies—Central Europe (gift).
- HELLMAYR, MRS. C. E., Chicago.  
1 English sparrow — Chicago (gift).
- HINE, ASHLEY, Chicago.  
8 mammals.  
50 birds—Western Canada (gift).
- HOWELL, A. B., Pasadena, Calif.  
2 free-tailed bats—California (gift).
- HOYT, N. L., Chicago.  
1 case of mounted birds (gift).
- ILLINOIS STATE DEPARTMENT OF GAME AND FISH,  
Springfield, Illinois.  
3 spoonbill catfish—Illinois.  
2 turtles—Illinois (gift).
- JACOBS, JOHN SHIELDS, Chicago.  
1 rattle-snake (gift).
- JENSEN, MARTIN, Chicago.  
1 scorpion—Chicago (gift).
- KAEMPFER, FRED, Chicago.  
1 monkey—South America (gift).
- KNICKERBOCKER, C. K., Chicago.  
1 woodpecker—Minnesota (gift).
- LEWY, DR. ALFRED, Chicago.  
1 red-throated loon—Indiana (gift).

- LILJEBLAD, E., Chicago.  
 14 grasshoppers, flies, bugs and beetles—Michigan and Illinois (gift).
- LINDSEY, DR. A. W., Granville, Ohio.  
 2 beetles—California (gift).
- MARSHALL, BYRON C., Imboden, Arkansas.  
 5 insects, spiders and ticks—Arkansas (gift).
- MORDEN, W. J., Chicago.  
 2 mountain sheep—Yukon, Canada (gift).
- MOREHEAD, MRS. E., Chicago.  
 1 Sphinx moth—Georgia (gift).
- MUSEUM OF COMPARATIVE ZOOLOGY, Cambridge, Massachusetts.  
 50 lizards—Fiji Islands (gift).
- NARBO, DR. S., Stavanger, Norway.  
 8 sets of eggs.  
 2 nests—Norway (gift).
- NEW YORK STATE CONSERVATION COMMISSION, Albany, N. Y.  
 2 Chautauqua Lake muskallonge—New York (gift).
- OSGOOD, DR. WILFRED H., Chicago.  
 1 beetle—Illinois (gift).
- PATTERSON, IVAN D., Polo, Illinois.  
 1 snake—Illinois (gift).
- PRAY, LEON L., Chicago.  
 3 bird-lice—Michigan (gift).
- RINDSFOOS, WILLIAM, Columbus, Ohio.  
 2 Alaskan white sheep—Alaska (gift).
- ROTHSCHILD'S DEPT. STORE AQUARIUM, Chicago.  
 127 specimens of aquarium fishes,  
 7 snakes—Florida, Texas and Arizona.  
 4 salamanders, 5 frogs, 9 lizards,  
 17 turtles, 59 snakes—Various localities.  
 3 horned toads—Texas.  
 1 head of gar-pike—Illinois.  
 1 frog—Louisiana (gift).
- SAGATAS, PETER, Glencoe, Illinois.  
 1 hornet's nest—Illinois (gift).
- SANBORN, C. C., Chicago.  
 20 bird-lice, 1 louse-fly, 1 water beetle, 18 mammals, 1 black-bellied plover, 1 toad, 7 frogs, 1 blowing adder—Illinois (gift).
- SCUPHAM, E., Chicago.  
 3 bird-lice.  
 3 millipedes—Illinois (gift).
- SEELIG, J. C., Chicago.  
 1 tanned skin of large lizard—West Sumatra.  
 1 skin of slow lemur—Padang, Sumatra (gift).
- SOUTHERN BIOLOGICAL SUPPLY CO., New Orleans, Louisiana.  
 4 tree frogs—Louisiana (gift).
- THOMAS, R. K., Navajo, Arizona.  
 1 beetle.  
 50 shells—Arizona (gift).
- THOMPSON, G. C., Chicago.  
 1 grasshopper, 1 beetle, 11 moths,  
 15 rat fleas—Illinois (gift).
- TUNA CLUB, Catalina Island, California.  
 9 game fish—California (gift).
- TYRRELL, W. B., Chicago.  
 3 frogs—Michigan (gift).
- WALTERS, L. L., Chicago.  
 3 toads, 1 lizard, 111 snakes—Indiana (gift).
- WEED, A. C., Chicago.  
 9 flies—New York.  
 6 bugs, 7 centipedes, 7 millipedes,  
 2 beetle larvæ, 1 snake—Illinois.  
 1 water snake skull—New York (gift).
- WOLCOTT, A. B., Chicago.  
 1 fly, 1 butterfly, 2 bugs, 2 earwigs, 3 moths, 3 beetles, 10 bees, wasps and parasites—Illinois (gift).
- YOUNG, F. S., Chicago.  
 5 snakes—Florida (gift).

## THE LIBRARY

## LIST OF DONORS AND EXCHANGES

(Accessions are by exchange, unless otherwise designated)

## AFRICA:

Durban Museum.  
 East Africa and Uganda Natural History, Nairobi.  
 Geological Society, Johannesburg.  
 Government of Uganda Protectorate.  
 Institut d'Egypte, Cairo.  
 Ministry of Public Works, Cairo.  
 Rhodesia Scientific Society, Bulawayo.  
 Royal Society of South Africa, Cape Town.  
 South African Association for Advancement of Science, Cape Town.  
 South African Department of Agriculture, Pretoria.  
 South African Museum, Cape Town.

## ARGENTINA:

Direccion Edicion Oficial Obras Completas de Ameghino, La Plata.  
 Museo de La Plata.  
 Museo Naciorial, Buenos Aires.  
 Sociedad Argentina de Ciencias Naturales, Buenos Aires.  
 Sociedad Ornithologica del Plata, Buenos Aires.  
 Universidad Nacional, Buenos Aires.

## AUSTRALIA:

Australian Museum, Sydney.  
 Botanic Gardens and Government Domains, Sydney.  
 Commonwealth of Australia, Melbourne.  
 Department of Agriculture, Sydney.  
 Department of Agriculture, Adelaide.  
 Department of Agriculture, Wellington.  
 Department of Mines, Brisbane.  
 Department of Mines, Sydney.  
 Field Naturalists' Club, Melbourne.  
 Fish Commission of New South Wales, Sydney.  
 Forestry Commission, Sydney (gift).  
 Geological Survey of Western Australia, Perth.  
 Institute of Science and Industry, Sydney.  
 Linnean Society of New South Wales, Sydney.  
 Melbourne University.  
 National Herbarium, Melbourne.  
 Public Library, Museum and Art Gallery, Adelaide.

Public Library, Museum and National Gallery of Victoria, Melbourne.  
 Queensland Museum, Brisbane.  
 Royal Geographical Society of Australasia, Brisbane.  
 Royal Society of New South Wales, Sydney.  
 Royal Society of Queensland, Brisbane.  
 Royal Society of South Australia, Adelaide.  
 Royal Society of Tasmania, Hobart.  
 Royal Society of Victoria, Melbourne.  
 Royal Society of Western Australia, Perth.  
 Royal Zoological Society of New South Wales, Sydney.  
 South Australia Ornithological Society, Adelaide.  
 South Australian Museum, Adelaide.  
 Tasmanian Museum, Hobart.  
 Victoria Department of Agriculture, Melbourne.  
 Western Australia Geological Survey, Perth.

## AUSTRIA:

Naturhistorisches Hofmuseum, Vienna.  
 Naturhistorisches Landesmuseum von Kärnten, Klagenfurt.  
 Universität, Vienna.  
 Zoologisch-Botanische Gesellschaft, Vienna.

## BRITISH GUIANA:

Royal Agricultural and Commercial Society, Georgetown.

## BELGIUM:

Académie Royale de Belgique, Brussels.  
 Institut Botanique Léo Errera, Brussels.  
 Jardin Botanique de l'Etat, Brussels.  
 Musée Royale d'Histoire Naturelle, Brussels.  
 Nederlandsche Phytopathologische (Plantenziekten) Vereeniging, Gent.  
 Société Royale d'Archéologie, Brussels.  
 Société de Botanique, Brussels.  
 Vereenigingen Kruidkundig Genootschap Dodonaea, Gent.

FIELD MUSEUM OF NATURAL HISTORY.

REPORTS, PLATE XXVII.



STAGE SCENE FROM CHINESE RELIGIOUS DRAMA SHOWING THE TEN PURGATORIES.

Case 26x7 feet. Hall I.

**THE HISTORY**

*of the*

*United States.*

*Volume*

*XXVII.*

*1850.*

*1851.*

*1852.*

*1853.*

*1854.*

*1855.*

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## BRAZIL:

Biblioteca Nacional, Rio de Janeiro.  
 Escola Superior de Agricultura e  
 Medecina, Veterinaria. Rio de  
 Janeiro.  
 Instituto Agronomico, Sao Paulo.  
 Instituto Sorotherapico de Butantun,  
 Sao Paulo.  
 Sociedade Brasileira de Sciencias,  
 Rio de Janeiro.  
 Museu Nacional, Rio de Janeiro.  
 Jardin Botanique de Rio de Janeiro.  
 Society, Demerara.

## BULGARIA:

Musée Ethnographique National,  
 Sofia.

## CANADA:

Canadian Arctic Expedition, Ottawa  
 (gift).  
 Chief Game Guardian of Saskatchewan,  
 Regina.  
 Commission de Géographie de Québec  
 (gift).  
 Department of Agriculture, Ottawa.  
 Department of Agriculture, Victoria.  
 Department of Mines, Ottawa.  
 Department of Interior, Geological  
 Survey, Ottawa.  
 Entomological Society of Ontario,  
 Toronto.  
 Horticultural Societies, Toronto.  
 Ontario Minister of Education,  
 Toronto.  
 Provincial Museum, Toronto.  
 Provincial Museum, Victoria.  
 Royal Canadian Institute, Toronto.  
 Royal Society of Canada, Ottawa.  
 Société de Géographie, Québec.  
 University of Toronto.

## CENTRAL AMERICA:

Colegio de Soñoritas, San José.

## CEYLON:

Colombo Museum.

## CHINA:

Botany and Forestry Department,  
 Hong-Kong.  
 Geological Survey, Pekin.  
 Royal Asiatic Society of North  
 China, Shanghai.  
 Science Society of China, Shanghai  
 (gift).  
 University of Nanking.

## CZECHO-SLOVAKIA:

Deutscher Naturwissenschaftlich  
 Medizinischer Verein für Böhmen  
 "Lotos" Prag.

Gesellschaft für Physiokratie in  
 Böhmen, Prag.  
 Societas Entomologica Bohemica,  
 Prag.  
 Universita Karlova, Prag.

## DENMARK:

Danske Kunstdindustrimuseum, Co-  
 penhagen.  
 Naturhistorisk Forening, Copen-  
 hagen.  
 Société Botanique, Copenhagen.

## ECUADOR:

Academia Nacional de Historia,  
 Quito.

## FEDERATED MALAY STATES:

Federated Malay States Museum,  
 Kuala Lumpur.

## FIJI ISLANDS:

Fijian Society, Suva.

## FINLAND:

Abo Akademi.  
 Finnish Archaeological Society, Hel-  
 singfors.  
 Finskt Museum, Helsingfors.  
 Societas pro Fauna et Flora Fennica,  
 Helsingfors.

## FRANCE:

Académie des Sciences, Paris.  
 Congrès de Monaco, Paris (gift).  
 École d'Anthropologie, Paris.  
 Ministère de l'Instruction Publique,  
 Paris (gift).  
 Musée Guimet, Paris.  
 Muséum National d'Histoire Na-  
 turelle, Paris.  
 La Nature, Paris.  
 Société d'Études Scientifiques, An-  
 gers.  
 Société d'Histoire Naturelle, Toul-  
 ouse.  
 Société d'Horticulture, Paris.  
 Société de Géographie, Paris.  
 Société de Géographie, Toulouse.  
 Société des Américanistes, Paris.  
 Société Linguistique de Paris.  
 Société Linnéenne, Bordeaux.  
 Société Nationale d'Agriculture,  
 Sciences et Arts, Angers.

## GERMANY:

Bayerische Akademie der Wissen-  
 schaften, Munich.  
 Botanischer Garten und Botanisches  
 Museum, Berlin.  
 Botanischer Verein der Provinz  
 Brandenburg, Berlin.

- Deutsche Dendrologische Gesellschaft, Bonn-Poppelsdorf.  
 Deutsche Gesellschaft für Anthropologie, Ethnologie und Urgeschichte, Berlin.  
 Deutsche Morgenländische Gesellschaft, Leipzig.  
 Deutscher Seefischerei Verein, Berlin.  
 Deutsches Entomologisches Institut, Berlin.  
 Geographische Gesellschaft, Hamburg.  
 Gesellschaft für Erdkunde, Berlin.  
 Gesellschaft zur Förderung der Gesamten Naturwissenschaften, Marburg.  
 Hamburgische Universität.  
 K. Museum für Volkskunde, Berlin.  
 K. Universitäts Bibliothek, Marburg.  
 K. Universitäts Bibliothek, Munich.  
 K. Zoologisches Museum, Berlin.  
 Museum für Völkerkunde, Hamburg.  
 Museum für Völkerkunde, Leipzig.  
 Nassauischer Verein für Naturkunde, Wiesbaden.  
 Naturforschende Gesellschaft, Görlitz.  
 Naturwissenschaftliche Gesellschaft, Dresden.  
 Naturwissenschaftlicher Verein, Karlsruhe.  
 Naturwissenschaftlicher Verein für Schleswig-Holstein, Kiel.  
 Naturwissenschaftlicher Verein für Steiermark, Graz.  
 Ornithologische Gesellschaft in Bayern, Munich.  
 Physikalisch-Medizinische Sozietät, Erlangen.  
 Rheinische Missions-Gesellschaft, Barmen.  
 Senckenbergische Naturforschende Gesellschaft, Frankfurt a-M.  
 Städtisches Museum für Völkerkunde, Leipzig.  
 Verein für Vaterländische Naturkunde in Württemberg, Stuttgart.  
 Zoologisches Museum, Hamburg.
- GREAT BRITAIN:**
- Ashmolean Museum, Oxford.  
 Birmingham Natural History and Philosophical Society.  
 Bristol Museum and Gallery.  
 British Museum, London.  
 British Museum (Natural History), London.  
 Cambridge Antiquarian Society.  
 Cambridge Philosophical Society.  
 Cardiff Naturalists' Society.
- Challenger Society, London.  
 Dove Marine Laboratory, Cullercoats.  
 Dumfriesshire and Galloway Natural History and Antiquarian Society, Dumfries.  
 Fisheries Board, Edinburgh.  
 Geological Society, Edinburgh.  
 Geological Society, Liverpool.  
 Great Britain Geological Survey, London.  
 Horniman Museum and Library, London.  
 Hull Municipal Museum.  
 Imperial Bureau of Entomology, London.  
 Imperial College of Science and Technology, London.  
 Japan Society of London.  
 Lancashire Sea Fisheries Laboratory, Liverpool.  
 Linnean Society of London.  
 Liverpool Biological Society.  
 London Library.  
 Manchester Field Naturalists' and Archaeologists' Society.  
 Manchester Geographical Society.  
 Manchester Literary and Philosophical Society.  
 Manchester Museum.  
 Marine Biological Association, Plymouth.  
 Museum of Archaeology and Ethnology, Cambridge.  
 National Museum of Wales, Cardiff.  
 Natural History and Philosophical Society, Croydon.  
 Natural History Society, Glasgow.  
 Natural History Society of Northumberland, Durham and Newcastle-on-Tyne, Newcastle.  
 Royal Anthropological Institute of Great Britain and Ireland, London.  
 Royal Botanic Gardens, Edinburgh.  
 Royal Botanic Gardens, Kew.  
 Royal Colonial Institute, London.  
 Royal Geographical Society, London.  
 Royal Horticultural Society, London.  
 Royal Scottish Museum, Edinburgh.  
 Royal Society, London.  
 Royal Society of Arts, London.  
 Royal Society of Edinburgh.  
 South London Entomological and Natural History Society, London.  
 Tring Zoological Museum.  
 Victoria and Albert Museum, London.  
 Wellcome Chemical Research Laboratories, London.  
 Zoological Society of London.  
 Zoological Society of Scotland.

## HUNGARY:

Magyar Természettudományi Társulat, Budapest.  
Museum Nationale Hungaricum, Budapest.

## INDIA:

Anthropological Society, Bombay.  
Archaeological Survey, Allahabad.  
Archaeological Survey, Calcutta.  
Archaeological Survey, Eastern Circle, Patna.  
Archaeological Survey, Frontier Circle, Peshawar.  
Archaeological Survey Department, Madras.  
Archaeological Survey of Burma, Lahore.  
Asiatic Society of Bengal, Calcutta.  
Bihar and Orissa Research Society, Patna.  
Department of Agriculture, Bombay.  
Department of Agriculture, Madras.  
Department of Agriculture, Poonia.  
Department of Agriculture, Pusa.  
Geological Survey, Calcutta.  
Government of India, Calcutta.  
Government Cinchona Plantation, Calcutta.  
Government Museum, Madras.  
Indian Museum, Calcutta.  
Journal of Indian Botany, Madras.  
National Indian Association, Calcutta (gift).  
Royal Asiatic Society, Straits Branch, Singapore.  
Superintendent of Archaeology, Kashmir.  
Superintendent of Archaeology H. E. H. Nizam's Dominions, Hyderabad.  
University of Calcutta.  
Zoological Survey of India, Calcutta.

## IRELAND:

Belfast Naturalists' Field Club.  
Department of Agriculture, Scientific Investigations, Dublin.  
Geological Survey, Dublin.  
National Museum of Science and Art, Dublin.  
Natural History and Philosophical Society, Belfast.  
Royal Irish Academy, Dublin.  
Royal Dublin Society.

## ITALY:

Accademia delle Scienze Fisiche e Matematiche, Naples.  
Istituto Botanica, Universita di Pavia.

Instituto Geografico de Agostini, Novara.  
Musei Zoologiae Anatomia Comparata, Turin.  
R. Accademia Nazionale dei Lincei, Rome.  
R. Accademia delle Scienze di Torino.  
R. Orto Botanico Giardino Coloniale, Palermo.  
R. Scuola Superiore di Agricoltura, Portici.  
R. Società Geografica Italiana, Rome.  
Società di Scienze Naturali ed Economiche, Palermo.  
Società Italiana d'Antropologia e Etnologia, Florence.  
Società Italiana de Scienze Naturali, Milan.  
Società Toscana di Scienze Naturali, Pisa.

## JAPAN:

Anthropological Society, Tokyo.  
Educational Museum, Tokyo.  
Geological Society, Tokyo.  
Imperial University, Taihoku.  
Imperial University of Tokyo, College of Science.  
Ornithological Society, Tokyo.  
Tokyo Botanical Society.

## JAVA:

Bataviaasch Genootschap van Kunsten en Wetenschappen, Batavia.  
Department of Agriculture, Buitenzorg.  
Encyclopaedisch Bureau, Weltevreden.  
Jardin Botanique, Weltevreden.  
Java Instituut, Weltevreden.  
K. Natuurkundige Vereeniging in Nederlandsch-Indie, Weltevreden.

## KOREA:

Government General of Chosen, Keijo.

## MEXICO:

Instituto Geologico de Mexico.  
Museo Nacional de Arqueología, Historia y Etnografía, Mexico.  
Secretaría de Agricultura y Fomento, Dirección de Antropología, Mexico.  
Sociedad Científica "Antonio Alzate," Mexico.

## NETHERLANDS:

Koloniaal Instituut Amsterdam.  
Kolonial Museum te Haarlem.

K. Akademie van Wetenschappen, Amsterdam.  
 K. Bibliothek, Hague.  
 K. Instituut voor de Taal-Land-en Volkenkunde van Nederlandsch Indie, The Hague.  
 K. Nederlandsch Aardijkundig Genootschap, Amsterdam.  
 Museum voor Land-en Volkenkunde en Maritiem Museum "Prinz Hendrik," Rotterdam.  
 Nederlandsche Dierkunde Vereeniging, Leiden.  
 Nederlandsche Phytopathologische Vereeniging, Wageningen.  
 Rijks Ethnographisch Museum, Leiden.  
 Rijks Hoogere Land-Tuin-en Boschbouwschool, Wageningen.  
 Rijks Museum van Natuurlijke Historie, Leiden.  
 Universiteit van Amsterdam, Bibliotheek.

NEW ZEALAND:

Acclimatisation Society, Wellington.  
 Auckland Institute and Museum, Wellington.  
 Canterbury Museum, Christchurch.  
 Department of Agriculture, Wellington.  
 Department of Mines, Wellington.  
 Dominion Museum, Wellington.  
 New Zealand Board of Science and Art, Wellington.  
 New Zealand Institute, Wellington.

NORWAY:

Bergen Museum.  
 Physiographiske Forening i Christiania.  
 Tromso Museum.

PERU:

Biblioteca Nacional, Lima.  
 Cuerpo de Ingenieros de Minas, Lima.  
 Cuzco Universidad.  
 Instituto Historico, Lima.  
 Sociedad Geografica, de Lima.

POLAND:

Musei Polonici Historiae Naturales, Warsaw.

PORTUGAL:

Société Portugaise des Sciences Naturelles, Lisbon.  
 Universidade. Institute de Anatomia e Anthropologia, Lisbon.

RUSSIA:

Académie Impériale des Sciences, Petrograd.  
 Musée d'Anthropologie et d'Ethnographie, Petrograd.  
 Universität Dorpatensis.

SPAIN:

Collegio de Pasaje, La Guardia.  
 Institució Catalana d'Historia Natural, Barcelona.  
 Instituto General y Tecnico, Valencia.  
 Junta de Ciencias Naturals, Barcelona.  
 Museo Nacional de Ciencias Naturales, Madrid.  
 R. Academia de Ciencias y Artes, Barcelona.  
 R. Academia de Ciencias Exactas, Fisicas y Naturales, Madrid.  
 Sociedad Española de Historia Natural, Madrid.

SWEDEN:

Humanistika-Vetenskapsfundet, Lund.  
 K. Biblioteket, Stockholm.  
 K. Svenska Vetenskapsakademien, Stockholm.  
 K. Vetenskaps-och Vitterhets Samhälle, Göteborg.  
 K. Vitterhets, Historie och Antikvittets Akademien, Stockholm.  
 Lunds Universitet.  
 Svenska Sällskapet för Antropologi och Geografi, Stockholm.  
 Sveriges Offentliga Bibliotek, Stockholm.  
 Universitet. Biblioteket, Upsala.

SWITZERLAND:

Botanisches Museum, Zürich.  
 Historisches Museum, Bern.  
 Naturforschende Gesellschaft, Basel.  
 Naturforschende Gesellschaft, Bern.  
 Ostschweizerische Geograph-Commerciale Gesellschaft, St. Gallen.  
 Société de Physique et Historie Naturelle, Geneva.  
 Société Entomologique, Bern.  
 Société Fribougeoise des Sciences Naturelles, Fribourg.  
 Société Neuchateloise de Géographie.

VENEZUELA:

Cultura Venezolana, Caracas.

WEST INDIES:

Academia Nacional de Artes y Letras, Havana.

- Agricultural Experiment Station,  
Porto Rico.  
Biblioteca Nacional, Havana.  
Department of Agriculture of Ja-  
maica, Kingston.  
Imperial Department of Agriculture,  
Barbados.  
Oficina Nacional del Censo, Havana.  
Trinidad and Tobago Department of  
Agriculture, Port of Spain.  
Universidad de Habana.
- Ballai, Karl, Budapest (gift).  
Bertoni, Moises S., Parana.  
Boman, Eric, Buenos Aires (gift).  
Brown, A. R., Cape Town (gift).  
Carpenter, G. H., Dublin.  
Dunod, H., Paris.  
Fyson, P. F., Madras.  
Gamio, Manuel, Mexico (gift).  
Gleerup, C. W. K., Lund.  
Hartland, Sidney, Gloucester.  
Herdman, William, Liverpool.  
Hill-Tout, Charles, Vancouver, (gift).  
Huard, A., Quebec.  
Jenness, D., Ottawa.  
Lévy-Bruhl, L., Paris.  
Outes, Félix F., Buenos Aires.  
Preuss, K., Berlin.  
Rassers, W. H., Leiden (gift).  
Rinne, F., Leipzig (gift).  
Rivet, P., Paris.  
Sneathlage, E., Berlin (gift).  
Tavares, J. S., Braga.
- ALABAMA:**  
Agricultural Experiment Station,  
Auburn.  
Anthropological Society, Montgom-  
ery.
- ARIZONA:**  
Agricultural Experiment Station,  
Tucson.
- CALIFORNIA:**  
Agricultural Experiment Station,  
Berkeley.  
California Academy of Sciences,  
San Francisco.  
Cooper Ornithological Club, Holly-  
wood.  
Pomona College, Claremont.  
San Diego Society of Natural  
History.  
Scripps Institution of Biological Re-  
search, La Jolla.  
Stanford University.  
State Board of Forestry, Sacra-  
mento.  
State Mining Bureau, Sacramento.  
University of California, Berkeley.
- World Metric Standardization Coun-  
cil, San Francisco.
- COLORADO:**  
Bureau of Mines, Denver.  
Colorado College, Colorado Springs.  
Colorado Museum of Natural His-  
tory, Denver.  
Colorado Scientific Society, Denver.  
Colorado University, Boulder.  
State Historical and Natural History  
Society, Denver.
- CONNECTICUT:**  
Agricultural Experiment Station,  
New Haven.  
American Oriental Society, New  
Haven.  
Connecticut Academy of Arts and  
Sciences, New Haven.  
Hartford Public Library.  
Peabody Museum, New Haven.  
Wesleyan University, Middletown.  
Yale University, New Haven.
- DELAWARE:**  
Agricultural Experiment Station,  
Newark.
- FLORIDA:**  
Florida Geological Survey, Talla-  
hassee.
- GEORGIA:**  
Geological Survey, Atlanta.
- HAWAII:**  
Agricultural Experiment Station,  
Honolulu.  
Bernice Pauahi Bishop Museum,  
Honolulu.  
Board of Commissions of Agricul-  
ture and Forestry, Honolulu.  
Hawaiian Entomological Society,  
Honolulu.  
Hawaiian Historical Society, Hono-  
lulu.
- IDAHO:**  
Mining Industry, Boise.  
University of Idaho, Moscow.
- ILLINOIS:**  
Agricultural Experiment Station,  
Urbana.  
Art Institute of Chicago.  
Audubon Society, Chicago.  
Board of Education, Chicago.  
Chicago Public Library.  
Division of Natural History Survey,  
Urbana.  
Hardwood Record, Chicago (gift).  
John Crerar Library, Chicago.

Lake Forest College.  
 Newberry Library, Chicago.  
 Northwestern University, Evanston.  
 Open Court Publishing Company,  
 Chicago.  
 State Academy of Science, Springfield.  
 State Board of Agriculture, Springfield.  
 State Geological Survey, Urbana.  
 State Historical Library, Springfield.  
 State Water Survey, Urbana.  
 Sweet, Wallach and Company,  
 Chicago (gift).  
 University of Chicago.  
 University of Illinois, Urbana.  
 West Chicago Park Commissioners.

## INDIANA:

Academy of Science, Indianapolis.  
 Department of Conservation, Indianapolis.  
 Indiana University, Bloomington.  
 Legislative Reference Bureau, Indianapolis.  
 Purdue University, Lafayette.  
 University of Notre Dame.

## IOWA:

Iowa State College, Ames.  
 University of Iowa, Iowa City.

## KANSAS:

Agricultural Experiment Station,  
 Manhattan.  
 State Board of Agriculture, Topeka.  
 University of Kansas, Lawrence.

## KENTUCKY:

Agricultural Experiment Station,  
 Louisville.  
 Department of Geology and Forestry, Frankfort.

## LOUISIANA:

Agricultural Experiment Station,  
 Baton Rouge.  
 Department of Conservation, New Orleans.  
 Louisiana State Museum, New Orleans.

## MAINE:

Agricultural Experiment Station,  
 Orono.  
 Bowdoin College, Brunswick.  
 Portland Public Library.

## MASSACHUSETTS:

Agricultural Experiment Station,  
 Amherst.

American Antiquarian Society,  
 Worcester.  
 Boston Public Library.  
 Boston Society of Natural History.  
 Department of Agriculture, Division  
 of Ornithology, Boston.  
 Essex Institute, Salem.  
 Harvard College. Museum of Comparative Zoology, Cambridge.  
 Harvard University. Arnold Arboretum, Jamaica Plain.  
 Harvard University. Gray Herbarium, Cambridge.  
 Massachusetts Horticultural Society,  
 Boston.  
 Museum of Fine Arts, Boston.  
 New Bedford Free Public Library.  
 Peabody Institute, Peabody.  
 Peabody Museum, Cambridge.  
 Phillips Academy, Andover.  
 Salem Public Library.  
 Smith College, Northampton.  
 Springfield City Library Association.  
 Springfield Natural History Museum.  
 Tufts College.  
 Williams College, Williamstown.

## MICHIGAN:

Agricultural Experiment Station,  
 Agricultural College.  
 Detroit Institute of Art.  
 Geological and Natural History Survey, Lansing.  
 Grand Rapids Public Library.  
 Michigan College of Mines,  
 Houghton.  
 Michigan State Library, Lansing.  
 State Board of Agriculture, Lansing.  
 State Board of Library Commissions, Lansing.  
 University of Michigan, Ann Arbor.

## MINNESOTA:

Agricultural Experiment Station,  
 University Farm.  
 Minneapolis Institute of Arts.  
 Minnesota Historical Society, Saint Paul.  
 Saint Paul Institute.  
 University of Minnesota,  
 Minneapolis.

## MISSISSIPPI:

Agricultural Experiment Station,  
 Agricultural College.  
 State Geological Survey, Jackson  
 (gift).

## MISSOURI:

Agricultural Experiment Station,  
 Columbia.

- City Art Museum, Saint Louis.  
 Missouri Botanic Garden, Saint Louis.  
 Missouri Historical Society, Columbia.  
 Saint Louis Public Library.  
 Saint Louis University.  
 University of Missouri. School of Mines, Rolla.  
 Washington University, Saint Louis.
- MONTANA:**  
 University of Montana, Missoula.
- NEBRASKA:**  
 University of Nebraska, Lincoln.
- NEVADA:**  
 Agricultural Experiment Station, Carson City.
- NEW JERSEY:**  
 Agricultural Station, Trenton.  
 Department of Conservation and Development, Trenton.  
 Newark Museums Association.  
 Princeton University.  
 Stevens Institute, Hoboken.
- NEW MEXICO:**  
 New Mexico Museum, Santa Fe.
- NEW YORK:**  
 Agricultural Experiment Station, Geneva.  
 Amalgamated Press, New York City.  
 American Geographical Society, New York City.  
 American Institute of Mining Engineers, New York City.  
 American Museum of Natural History, New York City.  
 Asia Publishing Company, New York City.  
 Brooklyn Botanic Garden.  
 Brooklyn Institute of Arts and Sciences.  
 Buffalo Society of Natural Sciences.  
 Carnegie Foundation for the Advancement of Teaching, New York City (gift.)  
 Cooper Union for the Advancement of Science and Art, New York City.  
 Cornell University, Ithaca.  
 Forest and Stream Publishing Company, New York City.  
 Inter-American Magazine, New York City (gift.)  
 Japan Society, New York City.  
 Metropolitan Museum of Art, New York City.
- Museum of the American Indian, New York City.  
 New York Academy of Sciences, New York City.  
 New York Botanical Garden, New York City.  
 New York Historical Society, New York City.  
 Pratt Institute Free Library, New York City.  
 Public Library, New York City.  
 Rockefeller Foundation, New York City.  
 State College of Forestry, Syracuse.  
 State Library, Albany.  
 State Museum, Albany.  
 Staten Island Institute of Arts and Sciences, New York City.  
 Stone Publishing Company, New York City.  
 University of the State of New York, Albany.  
 Zoological Society, New York City.
- NORTH CAROLINA:**  
 Elisha Mitchell Scientific Society, Chapel Hill.
- NORTH DAKOTA:**  
 University of North Dakota, University.
- OHIO:**  
 Agricultural Experiment Station, Wooster.  
 Cincinnati Museum Association.  
 Cleveland Museum of Art.  
 Cleveland Public Library.  
 Denison University, Granville.  
 Geological Survey, Columbus.  
 State Archaeological and Historical Society, Columbus.  
 State University, Columbus.  
 University of Cincinnati.  
 Wilson Ornithological Club, Oberlin.
- OREGON:**  
 Agricultural Experiment Station, Corvallis.  
 University of Oregon, Eugene.
- PENNSYLVANIA:**  
 American Philosophical Society, Philadelphia.  
 Aquatic Life (gift.)  
 Association of Engineering Societies, Philadelphia.  
 Bryn Mawr College.  
 Carnegie Institute, Pittsburgh.  
 Carnegie Library, Pittsburgh.  
 Carnegie Museum, Pittsburgh.  
 Delaware County Institute of Science, Media.

Dropsie College, Philadelphia.  
 Engineers' Society of Western Pennsylvania, Pittsburgh.  
 Franklin Institute, Philadelphia.  
 Numismatic and Antiquarian Society, Philadelphia.  
 Pennsylvania Museum and School of Industrial Art, Philadelphia.  
 Philadelphia Academy of Natural Society, Wilkes-Barre.  
 Wyoming Historical and Geological Sciences.  
 Philadelphia College of Pharmacy.  
 Philadelphia Commercial Museum.  
 Sullivan Moss Society, Pittsburgh.  
 University of Pennsylvania, Philadelphia.  
 University of Pennsylvania, Museum, Philadelphia.  
 Wagner Free Institute of Science, Philadelphia.

**PHILIPPINE ISLANDS:**

Bureau of Education, Manila.  
 Department of Agriculture, Manila.  
 Department of Agriculture and Natural Resources, Manila.  
 Department of Interior, Bureau of Science, Manila.

**RHODE ISLAND:**

Park Museum, Providence.

**SOUTH CAROLINA:**

Charleston Museum.

**SOUTH DAKOTA:**

Agricultural Experiment Station, Brookings.  
 Geological and Natural History Survey, Vermilion.

**TEXAS:**

Agricultural Experiment Station, College Station.  
 University of Texas, Austin.

**VERMONT:**

Agricultural Experiment Station, Burlington.  
 State Forester, Montpelier.

**VIRGIN ISLANDS:**

Agricultural Experiment Station, St. Croix.

**VIRGINIA:**

State Library, Richmond.  
 University of Virginia, Charlottesville.  
 Virginia Geological Survey, Charlottesville.  
 Virginia State Forester, Charlottesville.

**WASHINGTON:**

Department of Conservation and Development, Division of Geology, Olympia.  
 Pacific Northwest Bird and Mammal Club, Seattle.  
 Washington Geological Survey, Pullman.  
 Washington University, Seattle.  
 Washington University, Historical Society, Seattle.

**WASHINGTON, D. C.:**

American Mining Congress.  
 Carnegie Institution of Washington (gift.)  
 Library of Congress.  
 National Academy of Sciences.  
 National Education Association (gift.)  
 National Zoological Park.  
 Pan American Union.  
 Smithsonian Institute.  
 United States Government.  
 United States National Museum.

**WEST VIRGINIA:**

West Virginia University, Morgantown.

**WISCONSIN:**

Agricultural Experiment Station, Madison.  
 Beloit College.  
 Geological and Natural History Survey, Madison.  
 Public Museum of Milwaukee.  
 State Horticultural Society, Madison.  
 University of Wisconsin, Madison.  
 Ayer, Edward E., Chicago (gift).  
 Arthur, J. C., Lafayette.  
 Baker, Frank Collins, Urbana.  
 Barnes, Claude T., Salt Lake City (gift).  
 Boas, Franz, New York City.  
 Beyer, George E., New Orleans.  
 Casey, Thomas L., Washington (gift).  
 Chalmers, W. J., Chicago (gift).  
 Cockerell, T. D. A., Boulder.  
 Conover, H. B., Chicago, (gift).  
 Cook, Melville T., New Brunswick.  
 Crook, A. R., Springfield.  
 Davies, D. C., Chicago (gift).  
 Derby, Mrs. William M. Jr., Chicago (gift).  
 Eigenmann, Carl H., Bloomington.  
 Evans, Alexander W., New Haven.  
 Farwell, Oliver A., Detroit (gift).  
 Field, Stanley, Chicago (gift).  
 Garland Manufacturing Company, Saco (gift).  
 Gerhard, William J., Chicago (gift).



TYPE OF CASE LOANED TO CHICAGO SCHOOLS  
BY THE N. W. HARRIS PUBLIC SCHOOL EXTENSION OF FIELD MUSEUM OF NATURAL HISTORY.



- Glessner, John J., Chicago (gift).  
Harris, G., Ithaca.  
Harrison, William J., Chicago (gift).  
Hay, Oliver P., Washington.  
Hrdlicka, Ales, Washington.  
Hubbs, Carl L., Ann Arbor.  
Kilby, W. Langdon, New York City  
(gift).  
Laufer, Berthold, Chicago (gift).  
Le Breton, Thomas L., Ambassador of  
Argentine, Washington (gift).  
Lewis, A. B., Chicago (gift).  
Liljeblad, Emil, Chicago (gift).  
Millspaugh, C. F., Chicago (gift).  
Morse, Edward S., Salem.  
Myer, Albert C., Philadelphia (gift).  
Osgood, W. H., Chicago (gift).  
Packard, E. L., Eugene (gift).  
Parish-Watson, New York City (gift).  
Penrose, R. A. F., Philadelphia.  
Richter, Gisela M. A., New York City  
(gift).  
Riggs, Mrs. Elmer S., Chicago (gift).  
Sargent, C. S., Jamaica Plain (gift).  
Steece, Henry M., Washington (gift).  
Tompkins-Kiel Marble Company, New  
York City (gift).  
Verner, S. P.,  
Weiss, Harry B., New Brunswick.  
Wicker, Carolyn, Chicago (gift).  
Wolcott, A. B., Chicago (gift).  
Zimmer, John T., Chicago (gift).

## ARTICLES OF INCORPORATION.

### STATE OF ILLINOIS.

DEPARTMENT OF STATE

WILLIAM H. HINRICHSEN, *Secretary of State.*

To ALL TO WHOM THESE PRESENTS SHALL COME, GREETING:

Whereas, a Certificate duly signed and acknowledged having been filed in the office of the Secretary of State, on the 16th day of September, A. D. 1893, for the organization of the COLUMBIAN MUSEUM OF CHICAGO, under and in accordance with the provisions of "An Act Concerning Corporations," approved April 18, 1872, and in force July 1, 1872, and all acts amendatory thereof, a copy of which certificate is hereto attached.

Now, therefore, I, William H. Hinrichsen, Secretary of State of the State of Illinois, by virtue of the powers and duties vested in me by law, do hereby certify that the said COLUMBIAN MUSEUM OF CHICAGO is a legally organized Corporation under the laws of this State.

In Testimony Whereof, I hereto set my hand and cause to be affixed the Great Seal of State. Done at the City of Springfield, this 16th day of September, in the year of our Lord one thousand eight hundred and ninety-three, and of the Independence of the United States the one hundred and eighteenth.

W. H. HINRICHSEN,

[SEAL]

*Secretary of State.*

TO HON. WILLIAM H. HINRICHSEN,

SECRETARY OF STATE:

SIR:

We, the undersigned citizens of the United States, propose to form a corporation under an act of the General Assembly of the State of Illinois, entitled "An Act Concerning Corporations," approved April 18, 1872, and all acts amendatory thereof; and that for the purposes of such organization we hereby state as follows, to-wit:

1. The name of such corporation is the "COLUMBIAN MUSEUM OF CHICAGO."
2. The object for which it is formed is for the accumulation and dissemination of knowledge, and the preservation and exhibition of objects illustrating Art, Archæology, Science and History.
3. The management of the aforesaid museum shall be vested in a Board of FIFTEEN (15) TRUSTEES, five of whom are to be elected every year.
4. The following named persons are hereby selected as the Trustees for the first year of its corporate existence:

Edward E. Ayer, Charles B. Farwell, George E. Adams, George R. Davis, Charles L. Hutchinson, Daniel H. Burnham, John A. Roche, M. C. Bullock, Emil G. Hirsch, James W. Ellsworth, Allison V. Armour, O. F. Aldis, Edwin Walker, John C. Black and Frank W. Gunsaulus.

5. The location of the Museum is in the City of Chicago, County of Cook, and State of Illinois.

(Signed),

George E. Adams, C. B. Farwell, Sidney C. Eastman, F. W. Putnam, Robert McCurdy, Andrew Peterson, L. J. Gage, Charles L. Hutchinson, Ebenezer Buckingham, Andrew McNally, Edward E. Ayer, John M. Clark, Herman H. Kohlsaat, George Schneider, Henry H. Getty, William R. Harper, Franklin H. Head, E. G. Keith, J. Irving Pearce, Azel F. Hatch, Henry Wade Rogers, Thomas B. Bryan, L. Z. Leiter, A. C. Bartlett, A. A. Sprague, A. C. McClurg, James W. Scott, Geo. F. Bissell, John R. Walsh, Chas. Fitzsimmons, John A. Roche, E. B. McCagg, Owen F. Aldis, Ferdinand W. Peck, James H. Dole, Joseph Stockton, Edward B. Butler, John McConnell, R. A. Waller, H. C. Chatfield-Taylor, A. Crawford, Wm. Sooy Smith, P. S. Peterson, John C. Black, Jno. J. Mitchell, C. F. Gunther, George R. Davis, Stephen A. Forbes, Robert W. Patterson, Jr., M. C. Bullock, Edwin Walker, George M. Pullman, William E. Curtis, James W. Ellsworth, William E. Hale, Wm. T. Baker, Martin A. Ryerson, Huntington W. Jackson, N. B. Ream, Norman Williams, Melville E. Stone, Bryan Lathrop, Eliphalet W. Blatchford, Philip D. Armour.

STATE OF ILLINOIS } ss.  
COOK COUNTY }

I, G. R. MITCHELL, a NOTARY PUBLIC in and for said County, do hereby certify that the foregoing petitioners personally appeared before me and acknowledged severally that they signed the foregoing petition as their free and voluntary act for the uses and purposes therein set forth.

Given under my hand and notarial seal this 14th day of September, 1893.

G. R. MITCHELL,  
NOTARY PUBLIC, COOK COUNTY, ILL.

[SEAL]

#### CHANGE OF NAME.

Pursuant to a resolution passed at a meeting of the corporate members held the 25th day of June, 1894, the name of the COLUMBIAN MUSEUM was changed to FIELD COLUMBIAN MUSEUM. A certificate to this effect was filed June 26, 1894, in the office of the Secretary of State for Illinois.

#### CHANGE OF NAME.

Pursuant to a resolution passed at a meeting of the corporate members held the 8th day of November, 1905, the name of the FIELD COLUMBIAN MUSEUM was changed to FIELD MUSEUM OF NATURAL HISTORY. A certificate to this effect was filed November 10, 1905, in the office of the Secretary of State for Illinois.

#### CHANGE IN ARTICLE 3.

Pursuant to a resolution at a meeting of the corporate members held the 10th day of May, 1920, the management of FIELD MUSEUM OF NATURAL HISTORY shall be invested in a Board of TWENTY-ONE (21) TRUSTEES, who shall be elected in such manner and for such time and term of office as may be provided for by the By-Laws. A certificate to this effect was filed May 21, 1920, in the office of the Secretary of State for Illinois.

## AMENDED BY-LAWS

(FEBRUARY 20, 1922.)

### ARTICLE I.

#### MEMBERS

SECTION 1. Members shall be of seven classes, Corporate Members, Honorary Members, Patrons, Life Members, Associate Members, Sustaining Members, and Annual Members.

SECTION 2. The Corporate Members shall consist of the persons named in the articles of incorporation, and of such other persons as shall be chosen from time to time by the Board of Trustees at any of its meetings, upon the recommendation of the Executive Committee; provided, that such person named in the articles of incorporation shall, within ninety days from the adoption of these By-Laws, and persons hereafter chosen as Corporate Members shall, within ninety days of their election, pay into the treasury the sum of twenty (\$20.00) dollars or more. Corporate Members becoming Life Members, Patrons or Honorary Members shall be exempt from dues. Annual meetings of said Corporate Members shall be held at the same place and on the same day that the annual meeting of the Board of Trustees is held.

SECTION 3. Honorary Members shall be chosen by the Board from among persons who have rendered eminent service to science, and only upon unanimous nomination of the Executive Committee. They shall be exempt from all dues.

SECTION 4. Patrons shall be chosen by the Board upon recommendation of the Executive Committee from among persons who have rendered eminent service to the Museum. They shall be exempt from all dues, and, by virtue of their election as Patrons, shall also be Corporate Members.

SECTION 5. Any person paying into the treasury the sum of five hundred (\$500.00) dollars, at any one time, shall, upon the unanimous vote of the Board, become a Life Member. Life Members shall be exempt from all dues, and shall enjoy all the privileges and courtesies of the Museum that are accorded to members of the Board of Trustees.

SECTION 6. Any person paying into the treasury of the Museum the sum of one hundred (\$100.00) dollars, at any one time, shall upon the unanimous vote of the Board, become an Associate Member. Associate Members shall be entitled to: tickets admitting member and members of family, including non-resident home guests; all publications of the Museum, if so desired; reserved seats to all lectures and entertainments under the auspices of the Museum, provided reservation is requested in advance; and admission of holder of membership and accompanying party to all special exhibits and Museum functions day or evening.

SECTION 7. Sustaining Members shall consist of such persons as are selected from time to time by the Board of Trustees at any of its meetings, and who shall pay an annual fee of twenty-five (\$25.00) dollars, payable within thirty days after notice of election and within thirty days after each recurring annual date. This Sustaining Membership entitles the member to free admission for the member and family to Museum on any day and allows 25 admission coupons,

which may be used by any one, the Annual Report and such other Museum documents or publications as may be requested in writing. When a Sustaining Member has paid the annual fee of \$25.00 for six years, such member shall be entitled to become an Associate Member.

SECTION 8. Annual Members shall consist of such persons as are selected from time to time by the Board of Trustees at any of its meetings, and who shall pay an annual fee of ten (\$10.00) dollars, payable within thirty days after each recurring annual date. An Annual Membership shall entitle the member to a card of admission for the member and family during all hours when the Museum is open to the public, and free admission for the member and family to all Museum lectures or entertainments. This membership will also entitle the holder to the courtesies of the membership privileges of every Museum of note in the United States and Canada, so long as the existing system of cooperative interchange of membership tickets shall be maintained, including tickets for any lectures given under the auspices of any of the Museums during a visit to the cities in which the cooperative museums are located.

## ARTICLE II.

### BOARD OF TRUSTEES.

SECTION 1. The Board of Trustees shall consist of twenty-one members. The respective members of the Board now in office, and those who shall hereafter be elected, shall hold office during life. Vacancies occurring in the Board shall be filled at a regular meeting of the Board, upon the nomination of the Executive Committee made at a preceding regular meeting of the Board, by a majority vote of the members of the Board present.

SECTION 2. Regular meetings of the Board shall be held monthly. Special meetings may be called at any time by the President, and shall be called by the Secretary upon the written request of three Trustees. Five Trustees shall constitute a quorum, except for the election of officers or the adoption of the Annual Budget, when seven Trustees shall be required, but meetings may be adjourned by any less number from day to day, or to a day fixed, previous to the next regular meeting.

SECTION 3. Reasonable written notice, designating the time and place of holding meetings, shall be given by the Secretary..

## ARTICLE III.

### HONORARY TRUSTEES.

SECTION 1. As a mark of respect, and in appreciation of services performed for the Institution, those Trustees who by reason of inability, on account of change of residence, or for other cause or from indisposition to serve longer in such capacity shall resign their place upon the Board, may be elected, by a majority of those present at any regular meeting of the Board, an Honorary Trustee for life. Such Honorary Trustee will receive notice of all meetings of the Board of Trustees, whether regular or special, and will be expected to be present at all such meetings and participate in the deliberations thereof, but an Honorary Trustee shall not have the right to vote.

## ARTICLE IV.

### OFFICERS.

SECTION 1. The officers shall be a President, a First Vice-President, a Second Vice-President, a Third Vice-President, a Secretary, an Assistant Secretary and a Treasurer. They shall be chosen by ballot by the Board of Trustees, a majority of those present and voting being necessary to elect. The President,

the First Vice-President, the Second Vice-President, and the Third Vice-President shall be chosen from among the members of the Board of Trustees. The meeting for the election of officers shall be held on the third Monday of January of each year, and shall be called the Annual Meeting.

SECTION 2. The officers shall hold office for one year, or until their successors are elected and qualified, but any officer may be removed at any regular meeting of the Board of Trustees by a vote of two-thirds of all the members of the Board. Vacancies in any office may be filled by the Board at any meeting.

SECTION 3. The officers shall perform such duties as ordinarily appertain to their respective offices, and such as shall be prescribed by the By-Laws, or designated from time to time by the Board of Trustees.

#### ARTICLE V.

##### THE TREASURER.

SECTION 1. The Treasurer shall be custodian of the funds of the Corporation except as hereinafter provided. He shall make disbursements only upon warrants drawn by the Director and countersigned by the President. In the absence or inability of the Director, warrants may be signed by the chairman of the Finance Committee, and in the absence or inability of the President, may be countersigned by one of the Vice-Presidents. But no warrant shall be issued, except in conformity with a regularly prepared voucher, giving the name of the payee and stating the occasion for the expenditure, and verified and approved as hereinafter prescribed. It shall be no part of the duties of the Treasurer to see that the warrants have been issued in conformity with such vouchers.

SECTION 2. The securities and muniiments of title belonging to the corporation shall be placed in the custody of some Trust Company of Chicago to be designated by the Board of Trustees, which Trust Company shall collect the income and principal of said securities as the same become due, and pay same to the Treasurer, except as hereinafter provided. Said Trust Company shall allow access to and deliver any or all securities or muniiments of title to the joint order of the following officers, namely The President or one of the Vice-Presidents, jointly with the Chairman, or one of the Vice-Chairmen, of the Finance Committee of the Museum.

SECTION 3. The Treasurer shall give bond in such amount, and with such sureties as shall be approved by the Board of Trustees.

SECTION 4. All vouchers executed for the payment of liabilities incurred in the administration of the Museum, shall be verified by the Auditor, and approved for payment by the Director, and a member of the Executive Committee. All vouchers executed for expenditures for the construction or reconstruction of the Museum building, or buildings, shall be verified by the Auditor and approved for payment by the Chairman of the Building Committee. All vouchers executed in connection with the investments of the Corporation, or, in any way having to do with the endowment funds of the Corporation, shall be verified by the Auditor and approved for payment by the Chairman of the Finance Committee.

SECTION 5. The Harris Trust & Savings Bank of Chicago shall be Custodian of "The N. W. Harris Public School Extension of Field Museum" fund. The bank shall make disbursements only upon warrants drawn by the Director and countersigned by the President. In the absence or inability of the Director, warrants may be signed by the Chairman of the Finance Committee, and in the absence or inability of the President, may be countersigned by the Vice-Presidents. But no warrant shall be issued, except in conformity with a regularly prepared voucher, giving the name of the payee and stating the occasion for the expenditure, and verified and approved by the Auditor, the Director, and a

member of the Executive Committee. It shall be no part of the duties of the said Custodian to see that the warrants have been issued in conformity with such vouchers.

#### ARTICLE VI.

##### AUDITOR

SECTION 1. The Board of Trustees shall elect a Director of the Museum, who shall remain in office until his successor shall be elected. He shall have immediate charge and supervision of the Museum, and shall control the operations of the Institution, subject to the authority of the Board of Trustees and its Committees. The Director shall be the official medium of communication between the Board, or its Committees, and the scientific staff and maintenance force.

SECTION 2. There shall be four scientific departments of the Museum—Anthropology, Botany, Geology and Zoölogy; each under the charge of a Curator, subject to the authority of the Director. The Curators shall be appointed by the Board upon the recommendation of the Director, and shall serve during the pleasure of the Board. Subordinate staff officers in the scientific departments shall be appointed and removed by the Director upon the recommendation of the Curators of the respective Departments. The Director shall have authority to employ and remove all other employees of the Museum.

SECTION 3. The Director shall make report to the Board at each regular meeting, recounting the operations of the Museum for the previous month. At the Annual Meeting, the Director shall make an Annual Report, reviewing the work for the previous year, which Annual Report shall be published in pamphlet form for the information of the Trustees and Members, and for free distribution in such number as the Board may direct.

#### ARTICLE VII.

##### AUDITOR

SECTION 1. The Board shall appoint an Auditor, who shall hold his office during the pleasure of the Board. He shall keep proper books of account, setting forth the financial condition and transactions of the Corporation, and of the Museum, and report thereon at each regular meeting, and at such other times as may be required by the Board. He shall certify to the correctness of all vouchers for the expenditure of the money of the Corporation.

#### ARTICLE VIII.

##### COMMITTEES.

SECTION 1. There shall be five Committees, as follows: Finance, Building, Auditing, Pension and Executive.

SECTION 2. The Finance Committee shall consist of five members, the Auditing and Pension Committees shall each consist of three members, and the Building Committee shall consist of five members. All members of these four Committees shall be elected by ballot by the Board at the Annual Meeting, and shall hold office for one year, and until their successors are elected and qualified. In electing the members of these Committees, the Board shall designate the Chairman and Vice-Chairman by the order in which the members are named in the respective Committee; the first member named shall be Chairman, the second named the Vice-Chairman, and the third named, Second Vice-Chairman, succession to the Chairmanship being in this order in the event of the absence or disability of the Chairman.

SECTION 3. The Executive Committee shall consist of the President of the

Board, the Chairman of the Finance Committee, the Chairman of the Building Committee, the Chairman of the Auditing Committee, the Chairman of the Pension Committee, and three other members of the Board to be elected by ballot at the Annual Meeting.

SECTION 4. Four members shall constitute a quorum of the Executive Committee, and in all standing Committees two members shall constitute a quorum. In the event that, owing to the absence or inability of members, a quorum of the regularly elected members cannot be present at any meeting of any Committee, then the Chairman thereof, or his successor, as herein provided, may summon any members of the Board of Trustees to act in place of the absentee.

SECTION 5. The Finance Committee shall have supervision of investing the endowment and other permanent funds of the Corporation, and the care of such real estate as may become its property. It shall have authority to invest, sell, and reinvest funds, subject to the approval of the Board.

SECTION 6. The Building Committee shall have supervision of the construction, reconstruction, and extension of any and all buildings used for Museum purposes.

SECTION 7. The Executive Committee shall be called together from time to time as the Chairman may consider necessary, or as he may be requested to do by three members of the Committee, to act upon such matters affecting the administration of the Museum as cannot await consideration at the Regular Monthly Meetings of the Board of Trustees. It shall, before the beginning of each fiscal year, prepare and submit to the Board an itemized Budget, setting forth the probable receipts from all sources for the ensuing year, and make recommendations as to the expenditures which should be made for routine maintenance and fixed charges. Upon the adoption of the Budget by the Board, the expenditures as stated are authorized.

SECTION 8. The Auditing Committee shall have supervision over all accounting and bookkeeping, and full control of the financial records. It shall cause the same, once each year, or oftener, to be examined by an expert individual or firm, and shall transmit the report of such expert individual or firm to the Board at the next ensuing regular meeting after such examination shall have taken place.

SECTION 9. The Pension Committee shall determine by such means and processes as shall be established by the Board of Trustees to whom and in what amount the Pension Fund shall be distributed. These determinations or findings shall be subject to the approval of the Board of Trustees.

SECTION 10. The Chairman of each Committee shall report the acts and proceedings thereof at the next ensuing regular meeting of the Board.

SECTION 11. The President shall be ex-officio a member of all Committees and Chairman of the Executive Committee. Vacancies occurring in any Committee may be filled by ballot at any regular meeting of the Board.

## ARTICLE IX.

### NOMINATING COMMITTEE

SECTION 1. At the November meeting of the Board, each year a Nominating Committee of three shall be chosen by lot. Said Committee shall make nominations for membership of the Finance Committee, the Building Committee, the Auditing Committee, and the Pension Committee, and for three members of the Executive Committee, from among the Trustees, to be submitted at the ensuing December meeting and voted upon at the following Annual Meeting in January.



WATER HYACINTH (*Piaropus crassipes*).

REPRODUCTION OF AN ENTIRE PLANT.

STANLEY FIELD LABORATORIES, FIELD MUSEUM OF NATURAL HISTORY.

UNIVERSITY OF ILLINOIS LIBRARY

RECEIVED

## ARTICLE X.

SECTION 1. Whenever the word "Museum" is employed in the By-Laws of the Corporation, it shall be taken to mean the building in which the Museum as an Institution is located and operated, the material exhibited, the material in study collections, or in storage, furniture, fixtures, cases, tools, records, books, and all appurtenances of the Institution and the workings, researches, installations, expenditures, field work, laboratories, library, publications, lecture courses, and all scientific and maintenance activities.

SECTION 2. These By-Laws may be amended at any regular meeting of the Board of Trustees by a two-thirds vote of all the members present, provided the amendment shall have been proposed at a preceding regular meeting.

## HONORARY MEMBERS

AYER, EDWARD E.	GRAHAM, ERNEST R.
AYER, MRS. EDWARD E.	HARRIS, ALBERT W.
BLACKSTONE, MRS. T. B.	JONES, ARTHUR B.
CHALMERS, WILLIAM J.	McCORMICK, STANLEY
CRANE, CHARLES R.	RYERSON, MARTIN A.
FIELD, MARSHALL	SIMPSON, JAMES
FIELD, STANLEY	SPRAGUE, ALBERT A.

## PATRONS

ANDERSON, PEIRCE	KENNEDY, VERNON SHAW
ARMOUR, ALLISON V.	KUNZ, GEORGE F.
BUTLER, EDWARD B.	MANIERRE, GEORGE
COLLINS, ALFRED M.	MARKHAM, CHARLES H.
CUMMINGS, MRS. ROBERT F.	PAYNE, JOHN BARTON
DAY, LEE GARNETT	PROBST, EDWARD
HUTCHINSON, CHARLES L.	SARGENT, HOMER E.
KELLEY, WILLIAM V.	SMITH, WILLARD A.
	WHITE, HOWARD J.

DECEASED 1922

MILLER, JOHN S.  
WILSON, JOHN P.

## CORPORATE MEMBERS

ALDIS, OWEN F.	JONES, ARTHUR B.
ANDERSON, PEIRCE	KEEP, CHAUNCEY
ARMOUR, ALLISON V.	KELLEY, WILLIAM V.
AYER, EDWARD E.	KENNEDY, VERNON SHAW
BLAIR, WATSON F.	KOHLSAAT, HERMAN H.
BORDEN, JOHN	KUNZ, GEORGE F.
BUTLER, EDWARD B.	McCORMICK, CYRUS H.
BYRAM, HARRY E.	MANIERRE, GEORGE
CHALMERS, W. J.	MARKHAM, CHARLES H.
CHATFIELD-TAYLOR, H. C.	MITCHELL, JOHN J.
COLLINS, ALFRED M.	PAYNE, JOHN BARTON
CRANE, JR., RICHARD T.	PECK, FERDINAND W.
CUMMINGS, MRS. ROBERT F.	PORTER, GEORGE F.
DAVIES, D. C.	PROBST, EDWARD
DAY, LEE GARNETT	RYERSON, MARTIN A.
EASTMAN, SIDNEY C.	SARGENT, HOMER E.
ELLSWORTH, JAMES W.	SIMPSON, JAMES
FIELD, MARSHALL	SMITH, SOLOMON A.
FIELD, STANLEY	SMITH, WILLARD A.
GAGE, LYMAN J.	SPRAGUE, ALBERT A.
GRAHAM, ERNEST R.	STONE, MELVILLE E.
HARRIS, ALBERT W.	WHITE, HOWARD J.
HUTCHINSON, CHARLES L.	WRIGLEY, JR., WILLIAM

## DECEASED 1922

BARTLETT, A. C.
MILLER, JOHN S.
WILSON, JOHN P.

## LIFE MEMBERS

- |                        |                        |
|------------------------|------------------------|
| ADAMS, MILWARD         | CARRY, EDWARD F.       |
| ALDIS, ARTHUR T.       | CARR, CLYDE M.         |
| ALDIS, OWEN F.         | CARR, ROBERT F.        |
| ALEXANDER, WILLIAM A.  | CARTON, L. A.          |
| ALLEN, BENJAMIN        | CHALMERS, WILLIAM J.   |
| ALLERTON, ROBERT H.    | CLARK, EUGENE B.       |
| AMES, JAMES C.         | CLAY, JOHN             |
| AMES, KNOWLTON L.      | CLOW, WILLIAM E.       |
| ARMOUR, A. WATSON      | COBE, IRA M.           |
| ARMOUR, J. OGDEN       | CRAMER, CORWITH        |
| ARMOUR, LESTER         | CRAMER, E. W.          |
| BABCOCK, FRED'K. R.    | CRANE, CHARLES RICHARD |
| BAKER, MISS ISABELLE   | CRANE, JR., RICHARD T. |
| BANCROFT, EDGAR A.     | CROWELL, H. P.         |
| BANKS, ALEXANDER F.    | CUDAHY, JOSEPH M.      |
| BARRELL, FINLEY        | CUMMINGS, D. MARK      |
| BARRETT, MRS. A. D.    | CUNNINGHAM, FRANK S.   |
| BARRETT, ROBERT L.     | DAU, J. J.             |
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PALMER, POTTER  
PAM, MAX  
PATTEEN, HENRY J.  
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SPOOR, JOHN A.	

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HOXIE, MRS. JOHN R.
JOHNSON, FRANK S.
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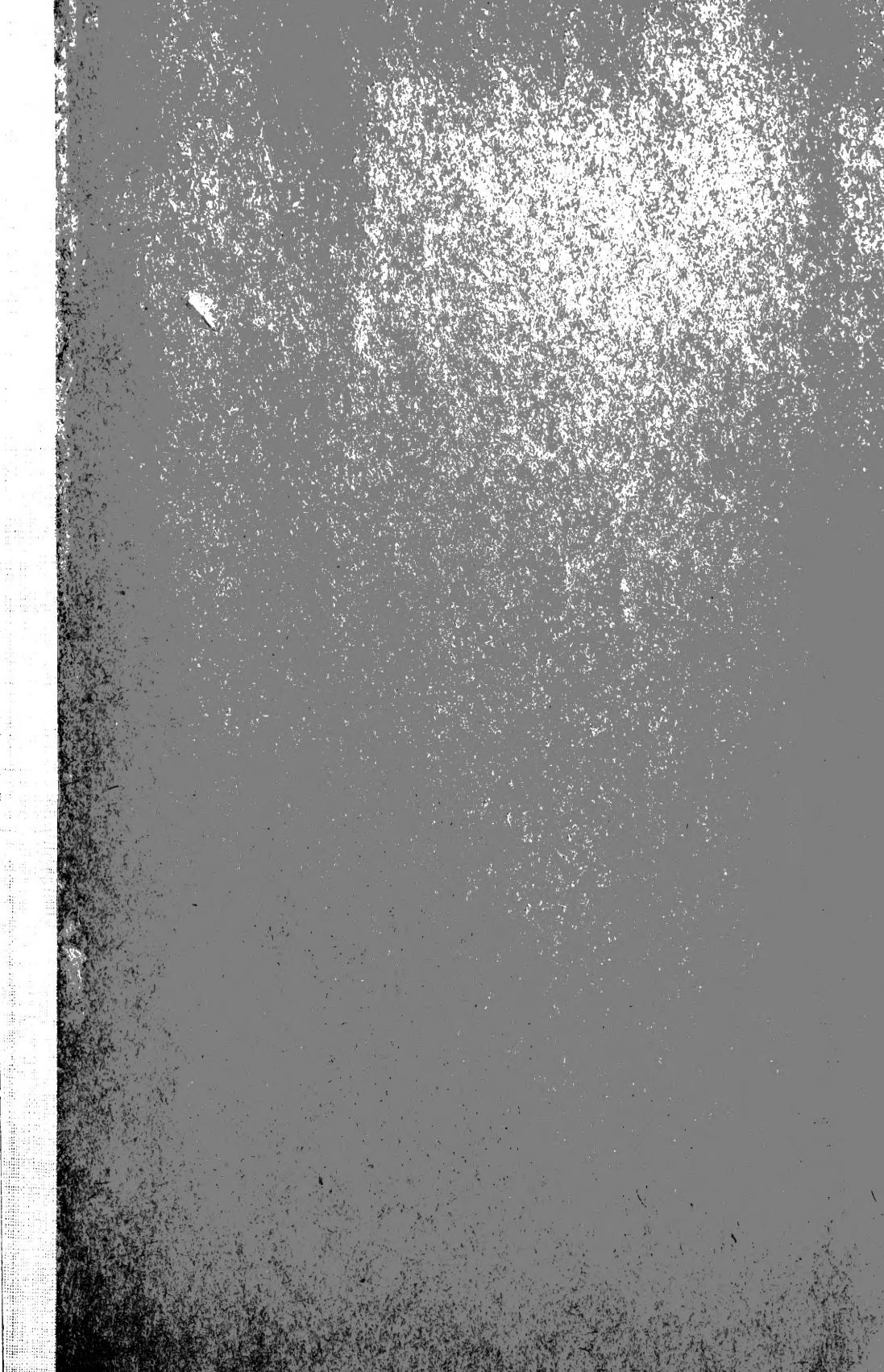
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